

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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EDITORIAL COMMENT.



The R.A.F. Display

THE greatest British aviation event of the year, the Royal Air Force Display, will take place at Hendon on Saturday of this week, July 3. Not only the number of machines taking part entitles the Display to be so styled, but nowhere in the world is better and more impressive flying to be seen than that to which visitors to the R.A.F. Displays are treated. Furthermore, the variety of the events is such that there is never a dull moment, and from exhibitions of perfect squadron formation flying and evolutions one changes to aerobatics, then on to bombing, then maybe to a race between machines of one type, and again to something totally different, such as a "message-picking-up competition." Add to all this variety the fact that the entire proceeds of the Display go towards various R.A.F. charities, funds, etc., and there should be little need for us to urge all of our readers who can possibly do so to go to Hendon next Saturday.

In connection with this year's Display, FLIGHT has attempted to assist its readers by including in this issue not only a pictorial review of previous R.A.F. Displays, or Pageants, as they used to be called, but also photographs and brief notes of "introduction" of all the types of machines taking part, in one way or another, in this year's Display. Thus readers of FLIGHT who are impressed by the performance or appearance of any particular machine can turn to our pages and discover information concerning it, such as the engine with which the type is fitted, the makers, whether or not the type is in general use in the R.A.F., and if so, which squadrons are equipped with it. Our "guide" to the types is divided into two sections, of which the first deals with the types of aeroplanes that take part in the various demonstrations. In the second section are contained photographs of and notes dealing with the types to be seen in the "Fly-past." It is hoped that FLIGHT's photographs of the various types may be of considerable assistance, forming as they do a permanent record of the machines and enabling visitors to

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

1926	
July 2	Entries close for King's Cup Race.
July 2	R.A.F. Dinner Club Annual Dinner, at Connaught Rooms.
July 3	Royal Air Force Display, Hendon.
July 3	Second R.A.F. Iraq Dinner, Hotel Cecil.
July 8-24	Royal Tournament, Olympia.
July 9-10	King's Cup Race, Hendon.
July 11	Lancashire Aero Club Display, Woodford Aerodrome.
July 11-27	German Seaplane Competition at Warnemunde.
July 19-Aug. 7	French Competition for Multi-engined Seaplanes, St. Raphael-Frejus.
July 31	Entries close (at special fee) for Light 'Plane Competition, Lympne.
Aug. 9-15	French Light 'Plane Competition.
Sept. 10-17	Two-Seater Light Aeroplane Competition, Lympne.
Sept. 18	Grosvenor Challenge Cup, at Lympne.
Oct.	Schneider Cup Race at Norfolk, Virginia, U.S.A.
Oct. 24-28	Coppa del Mare, Italy.
Nov. 11-15	Coppa d'Italia, Italy.
Nov.-Dec.	Paris Aero Show.

devote their attention to the behaviour of machines rather than to their appearance and details.

As in previous years, the official designation of machines taking part in the "Fly-past" is "new and experimental," and it is gratifying to be able to state that for once the title is reasonably apt. In previous years there has been rather too much tendency to attach undue importance to the "secrecy" of new types, with the result that some of the types to be seen in this particular feature of the Display have been neither very new nor very experimental. In this way it is to be feared that the reputation of manufacturers may on occasion have suffered somewhat through foreign air attachés and representatives having gone to the Display expecting to see the very latest types, thus receiving a quite erroneous impression of the stage to which the art and science of aircraft design has attained in this country.

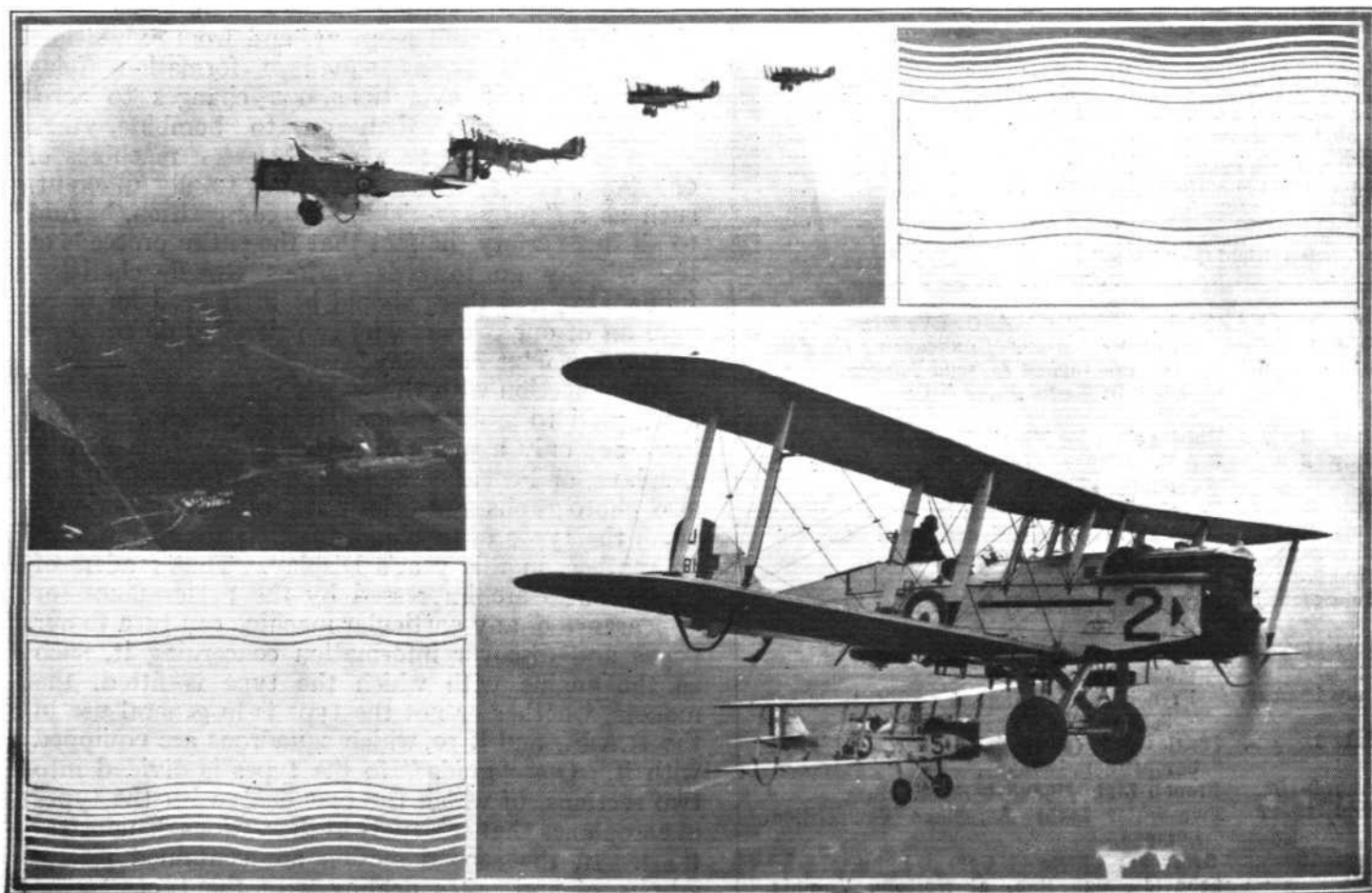
Whether as a result of the Air Ministry's avowed desire to help British manufacturers by facilitating the securing of orders from abroad, or from some other cause, the fact remains that this year practically every one of the 17 machines taking part in the "Fly-past" is a new type.

Among the machines which represent radical departures from normal design is, of course, chiefly the Cierva "Autogiro," in which four rotating vanes or blades, very similar to an ordinary airscrew, but much larger, take the place of the wings of an ordinary aeroplane. These blades, it should be noted, are not driven by the engine, but are kept rotating by the air forces upon them, a normal rotary aero engine and its propeller providing the necessary thrust for forward motion. Thus the "Autogiro" should not

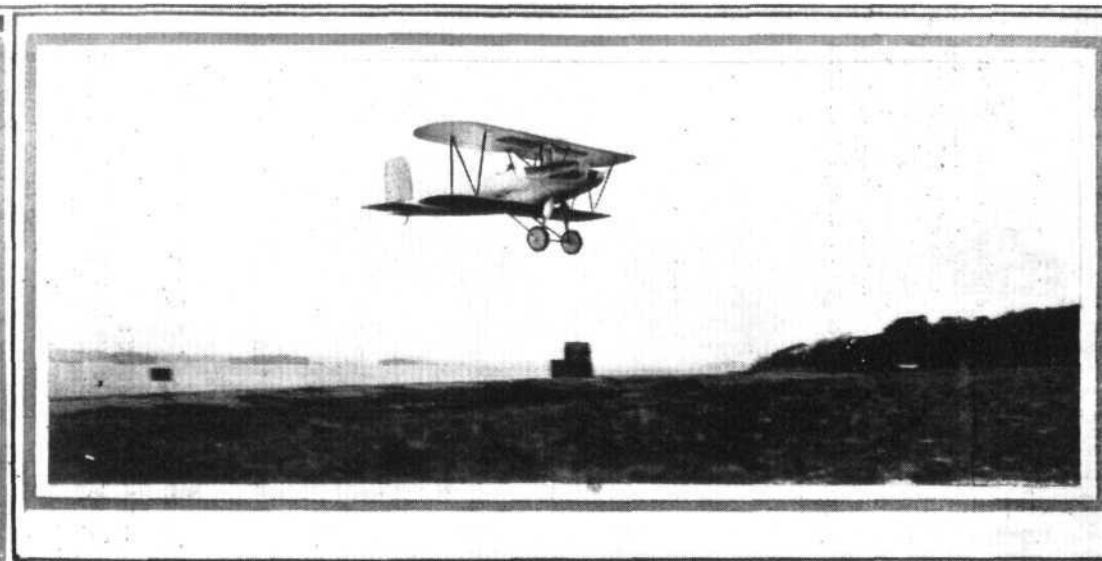
be confused with the "helicopter," in which the lifting screws are driven by the engine, although it possesses many of the advantages of the helicopter type of aircraft. This is not the place to give a technical explanation of the action of the "Autogiro," but for the benefit of our non-technical readers it may be stated briefly that the reasons why the "windmill" lifts at all are connected with the fact that although the speed of the machine itself may be only some 60 miles per hour, the circular path followed by the blades is probably traversed at an average speed of somewhere in the neighbourhood of 200 m.p.h. Thus it is not difficult to visualise the possibility of obtaining lift even when the machine itself is travelling very slowly.

The Hill "Pterodactyl" is another unusual machine, being characterised by having no tail, the main wings being swept back so as to enable the control surfaces on the wing tips to perform the functions of the tail of the normal aeroplane. The tailless machine has several advantages, but perhaps the most important, at any rate from a safety point of view, is that it does not stall suddenly. It is the lowest powered machine in the Display, having a Bristol "Cherub" of 34 h.p. only.

Of the new machines of "normal" type, the greatest interest will probably centre around the four single-seater fighters, which represent the last word, as far as Great Britain is concerned, in high-speed service aeroplanes. They are *not* racing machines (it is important to keep this in mind), but they are definitely very fast machines indeed, although equipped with guns and the other paraphernalia associated with fighting aircraft.



"A DRESS REHEARSAL." :] Some D.H. 9a's of No. 39 Bombing Squadron carrying out evolutions over Hendon. Note the formation of Fairey "Fawns" in the left-hand corner of the top picture.



AV_p²: Whether or not the name "Avenger" has anything to do with it is not known. In looking at this machine it is somewhat difficult to realise that it is a single-seater fighter and not a racer, so clean are the lines and so carefully is the equipment tucked away. The Lamblin radiators under the top 'plane should not offer much more head resistance than the wing type of radiator which follows the contour of the wing section. The careful cowling of the special Napier direct-drive "Lion" should be noted. The fuselage is of *monocoque* construction.

THE ARMSTRONG-WHITWORTH "ARGOSY"

The Latest Three-Engined Commercial Aeroplane

THE multi-engined aeroplane is undoubtedly gaining increasing favour as regards commercial work, and, what is more important, its various advantages are being substantiated in actual practice more and more as development progresses. In theory these advantages have always been unquestionable, but there have been, in the past, certain difficulties that have arisen when it came to actual practice—primarily, the problem of perfect balance and control under all conditions, especially when one or other of the engines is cut out.

on Saturday. This huge air liner, which has a span of 90 ft. 7½ ins. and has accommodation for 20 passengers, is fitted with three Siddeley "Jaguar" engines, developing a total of nearly 1,200 h.p.

One of its engines is mounted in the nose of the fuselage, while the remaining two engines are mounted midway between the main planes, one on each side of the fuselage. All three engines drive tractor airscrews. The wing engines, which project slightly beyond the leading edges of the planes, are



THE ARMSTRONG-WHITWORTH "ARGOSY": Three-quarter front view of the latest 20-passenger commercial aeroplane.

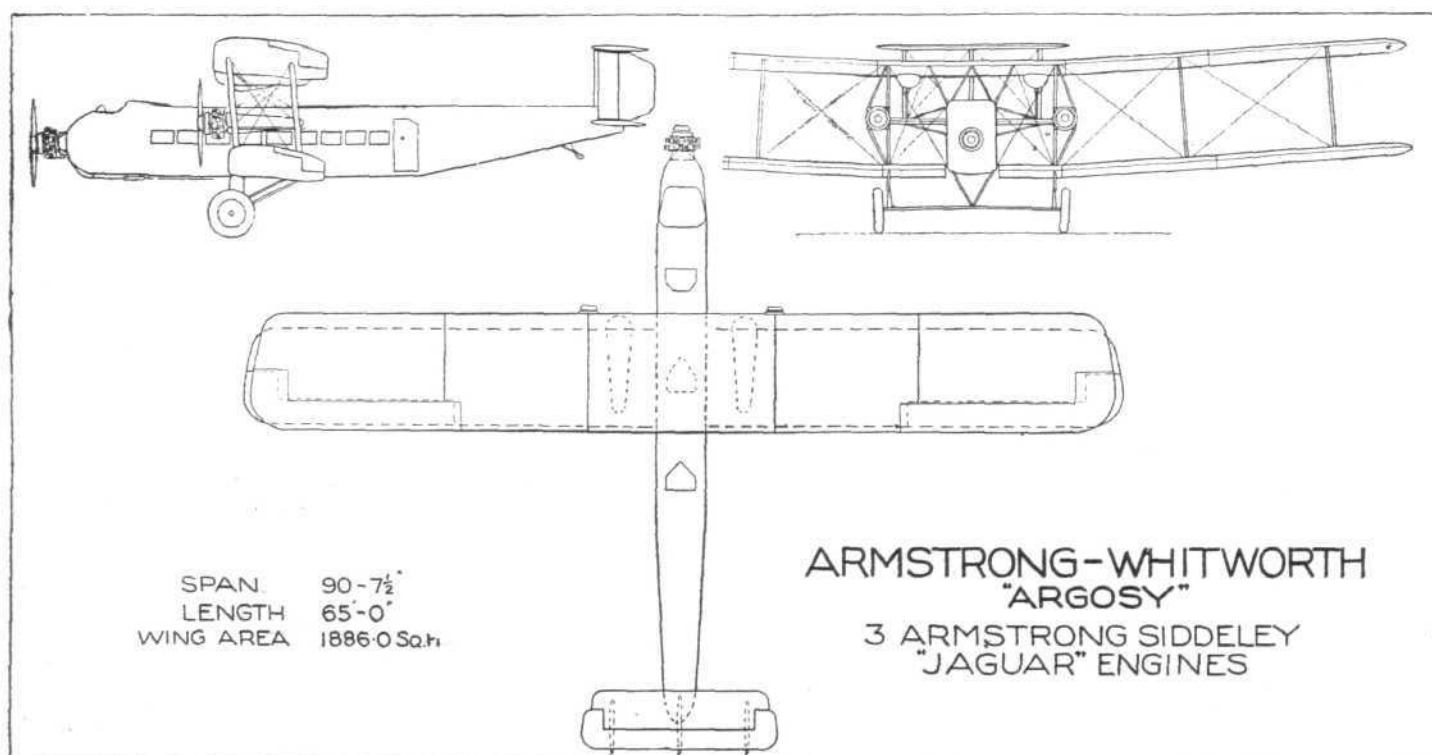
These difficulties, however, are today fast disappearing, and we think it can be said that the multi-engined machine is now as practical a proposition as is the single-engined type. This is apparent when it is remembered that the multi-engined machine is now adopted as the standard type for their commercial air services by Imperial Airways, Ltd.

Last week we were fortunate to be able to witness the trial flights of one of the latest designs in this class of commercial aircraft, *i.e.*, the Armstrong-Whitworth "Argosy," which will be seen in public for the first time at the R.A.F. Display

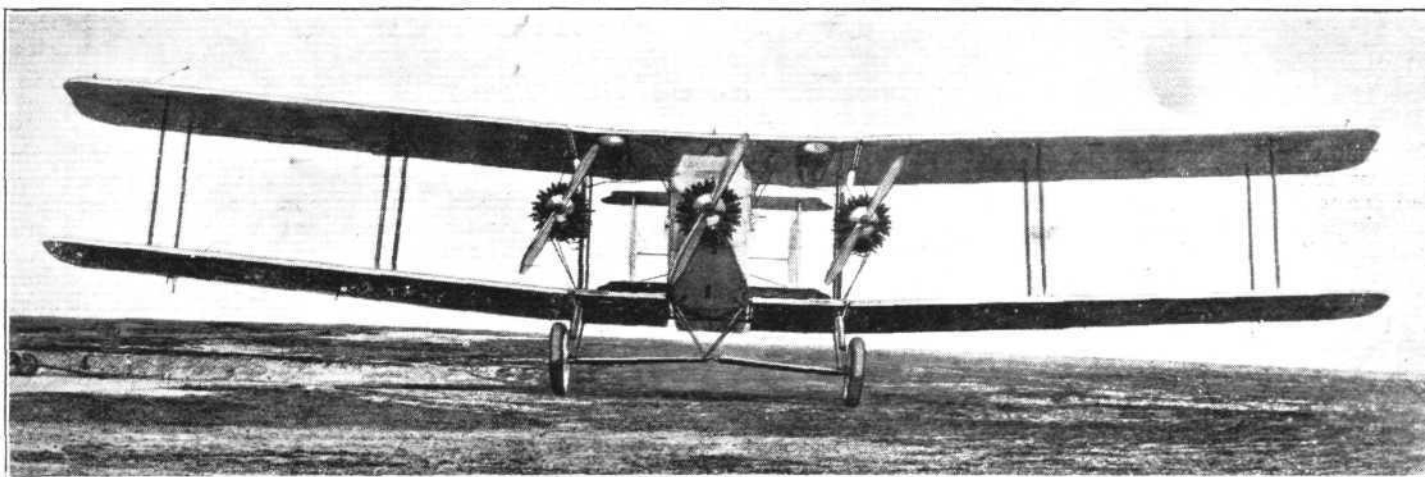
mounted steel tube nacelles carried by the centre-section interplane struts.

Upper and lower planes are set at a dihedral angle, but are not swept back. They are built up in five main sections—centre (the lower unit actually is in two sections, being divided by the fuselage), intermediate and outer. Balanced ailerons are fitted to both top and bottom planes. The large biplane tail, placed comparatively high in relation to the line of thrust, is adjustable as to incidence from the pilot's cockpit.

The fuselage, of rectangular cross section, is of tubular steel



THE ARMSTRONG-WHITWORTH "ARGOSY": General arrangement drawings.



THE ARMSTRONG-WHITWORTH "ARGOSY": Front view, from which the arrangement of the three Siddeley "Jaguar" engines may be seen.

construction (which, by the way, is employed largely throughout the construction of this machine), noteworthy for the fact that welding is conspicuous for its absence. The pilot's cockpit is located high up in the forward portion of the fuselage. Provision is made for two pilots, seated side by side, and seated high up, well in front, as they are, they have an excellent all-round view. Dual control is provided, and the arrangement and equipment of this cockpit is about the best we have had the pleasure of seeing.

Immediately behind the pilot's cockpit is a space which contains the wireless outfit, while a small window enables one pilot to look back right into the main cabin. Aft of this comes the main passenger cabin, some 30 ft. in length and about 6 ft. high. There is, in fact, an exceptional amount of room for the passengers, who enter the cabin by a door on the port side of the fuselage, and there is no transverse bracing of any kind inside this part of the fuselage.

The passengers are accommodated in two rows of very comfortable wicker armchairs, with a central gangway. Spacious windows (which can be opened), level with the passengers' heads, extend the entire length of the cabin walls, so that the interior of the cabin is not only very bright and cheerful, but an excellent view of the country below is obtained. Above the seats are racks for hats and light luggage.

For night flying the cabin is provided with electric light,

while on the front wall of the cabin are instruments indicating the speed and altitude of the machine. A lavatory adjoins the main cabin, and another compartment behind is provided for luggage—there being also another space for small packages beneath the pilot's cockpit.

The total weight of the "Argosy" is nearly 8 tons, of which 2 tons are paying load. Sufficient petrol is carried for a flight of 400 miles. Its top speed is in the neighbourhood of 110 m.p.h. and the normal cruising speed is 90-95 m.p.h.

The "Argosy" was put through its final trials before going for the Air Ministry tests last week by Capt. F. L. Barnard, the well-known Imperial Airways pilot—who, by the way, is responsible for numerous practical "brain waves" in its design. This huge machine certainly put up an exceptionally good performance. It takes off after a remarkably short run; in fact, it is able to take the air after a run of some 350 yards, and can attain an altitude of 3,000 ft. in five minutes. It flies well and comfortably on only two engines, making right and left turns without difficulty with either wing engine cut out.

In conclusion, we would like to say from actual experience that it is an exceptionally comfortable machine to fly in there being comparatively little noise, from the engines, inside the cabin, and even with Barnard's remarkable banked turns, we felt entirely at our ease seated in one of the roomy and comfortable chairs. Eventually the "Argosy" will be put into service by Imperial Airways.

THE KING'S CUP AIR RACE

THE race for the King's Cup, presented by His Majesty the King, will be held at Hendon Aerodrome on Friday and Saturday, July 9 and 10. The race will start early in the morning and competitors will be arriving and departing at short intervals throughout each day.

Members of the Royal Aero Club will be admitted free on presentation of their membership badges.

The charge for motor-cars will be 2s.

The following competitors are expected to take part:—

Vickers "Vixen" (entrant, Mr. Douglas Vickers), 450 h.p.
Napier "Lion" (pilot, E. R. C. Scholefield).

Nimbus-Martinsyde (entrant, Col. J. Barrett-Lennard), 300-330 h.p. "Nimbus" (pilot, Capt. F. T. Courtney).

Martinsyde A.D.C.1 (entrant, Col. M. O. Darby), Mark IIIA "Jaguar" (pilot, Squad-Leader W. G. Hubert Jones).

D.H.51 (entrant, Air Commodore J. G. Weir), 120-h.p. Airdisco (pilot, Col. The Master of Sempill).

"Bristol" Badminton (entrant, Sir George Stanley White), Bristol "Jupiter" (pilot, F. L. Barnard).

D.H. "Moth" (entrant, Capt. G. de Havilland), 27-60 "Cirrus" (pilot, Capt. G. de Havilland).

D.H. "Moth" (entrant, Sir Charles C. Wakefield, Bt.), 27-60 "Cirrus" (pilot, Capt. H. S. Broad).

D.H. "Moth" (entrant, The Duke of Sutherland), 27-60 "Cirrus" (pilot, Capt. F. G. M. Sparks).

Nimbus-Martinsyde (entrant, Col. M. O. Darby), 300-330 "Nimbus" (pilot, H. H. Perry).

Cranwell monoplane (entrant, Squad-Leader W. Thomas), Bristol "Cherub" (pilot, F. Compers).

D.H.37 (entrant, A. S. Butler), 300-330 h.p. "Nimbus" (pilot, A. S. Butler).

The course for each day is as follows:—

Hendon—Martlesham ..	72 miles.	
—Cambridge ..	49 "	
—Hendon ..	45 "	Total, 166 miles.

(Compulsory stop of 30 minutes.)

Hendon—Coventry ..	74 miles.	
—Cheltenham ..	44 "	
—Hendon ..	82 "	Total, 200 "

(Compulsory stop of 1 hour.)

Hendon—Martlesham ..	72 miles.	
—Cambridge ..	49 "	
—Hendon ..	45 "	Total, 166 "

(Compulsory stop of 30 minutes.)

Hendon—Coventry ..	74 miles.	
—Cheltenham ..	44 "	
—Hendon ..	82 "	Total, 200 "

Total for each day 732 miles.

Turning Points

Martlesham Heath.—30 ft. flagstaff flying Royal Air Force ensign, planted at the initial letter "M" in the name of station, "Martlesham Heath," set out in chalk letters on the middle of the aerodrome.

Cambridge.—A white cross on the ground in field 200 yards east of Cambridge railway station.

Coventry.—Whitley Aerodrome, 3 miles south of Coventry. Wind cone on the extreme south hangar on the aerodrome.

Cheltenham.—Brockworth Aerodrome (Gloucestershire Aircraft Co.), 7 miles south-west of Cheltenham and 3 miles east of Gloucester. White cross on aerodrome.

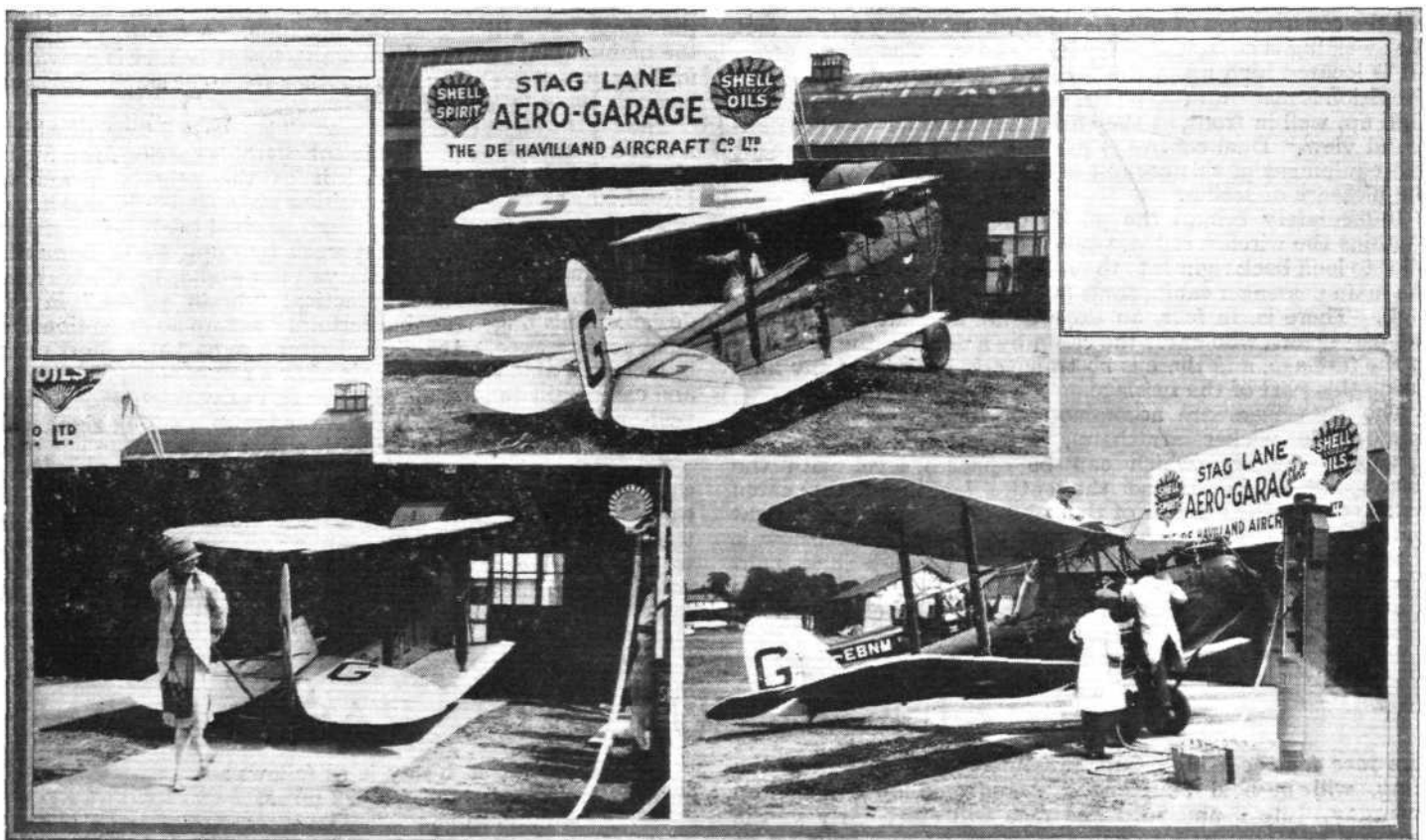
THE STAG LANE AERO GARAGE

Complete Service for Private Owners

THE uninitiated is frequently a little puzzled by the comparative scarcity of aeroplanes privately owned and operated, and is apt to put down this scarcity to the high cost of purchasing and operating an aeroplane of any sort. In a measure, of course, he is correct, since flying is hardly yet a "poor man's game." On the other hand, there is probably, generally speaking, a somewhat exaggerated idea of the expenses which need be incurred, and the limited amount of private flying in the past was not solely due to the cost. Before the owner of a private aeroplane can begin to enjoy to the full the pleasures which his machine can, and should, give him, he must be assured of suitable aerodromes in all parts of the country on which he can alight, and at which he can find accommodation for his machine during his absence, as well as having such minor repairs or inspections attended to as may reasonably be expected in any mechanically-propelled vehicle. In the past, it is fairly safe to assume, not the least obstacle to the popularisation of private flying has been the absence of

planes, includes the installation of a "Shell" petrol pump of the most modern type, which enables the tank of an aeroplane to be replenished in a few moments; licensed engineers who are qualified to carry out any adjustments or inspections that may be required are in attendance, while the fact that the aero garage adjoins the de Havilland works ensures that overhauls and repairs can be carried out with a minimum of delay.

Realising that the cost of running a private aeroplane is already sufficiently heavy, the de Havilland Aircraft Co. has decided upon a scale of charges which is very reasonable indeed in view of the services given. Thus for housing an aeroplane the charge is £4 per month, which fee includes the private lock-up and the sponging and wiping down of the machine after each day's flight, and the services, if necessary, of mechanics to wheel the machine out on the aerodrome, unfold the wings and start the engine. On application being made to the Aerodrome Inspector's office, the services of a



["FLIGHT" Photographs]

STAG LANE AERO GARAGE: Above are three photographs showing the service afforded to private aeroplane owners. On the left we see Mrs. Elliott-Lynn's "Moth" emerging from the cocoon; above, unfolding its wings; and on the right feeding it with "milk and honey," i.e., "Shell"

suitable aero "garages," and it is for this reason that we welcome, as an event of considerably greater importance than might appear at first sight, the official opening, on June 24, of the new aero garage at Stag Lane Aerodrome, Edgware.

The de Havilland Aircraft Company has always taken a leading position in any movement where civil flying is concerned and it is only natural that this firm should be the first to establish an aero garage where owners of private aeroplanes can have their machines housed and looked after by experienced engineers. At the moment the garage comprises six "compartments," each equipped with a bench, vice, shelves, and cupboard, and large enough to house a de Havilland "Moth" with its wings folded. All six are let, and the accommodation is to be increased in the immediate future. It is of interest to mention that among the present tenants of the garage are Sir John Rhodes, Bart., Mr. D. Kittel, Secretary of the Private Aircraft Owners' Club, Mrs. Elliott-Lynn, and Capt. Geoffrey de Havilland.

The de Havilland scheme, which goes a good deal farther than merely providing housing accommodation for aero-

qualified ground engineer are available for examining the machine, engine and instruments, and for the issue of the daily flying certificate (if required). The fee per examination is 7s. 6d.

Supplies of fuel and oil are always available on the aerodrome at current retail prices, and spares for the machine and engine can be supplied from stock (at any rate as regards spares for the "Moth" and its "Cirrus" engine) at small cost.

Major adjustments, overhauls and repairs are executed and charged for on a cost-plus-profit basis and, if desired, estimates can be submitted before the work is undertaken.

Finally, it may be pointed out that visitors by air are always welcomed at Stag Lane, and that *no landing fee is charged*. Altogether the establishment of the new aero garage at Stag Lane (the telegraphic address, by the way, is "Havilland" Edgware, and the telephone call Colindale 6160-6163) is to be welcomed as a distinct step in the right direction, and it is to be hoped that the example of the de Havilland Aircraft Company may soon be followed all over the country.

CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

SPEED AND USEFUL LOAD

[2137]. In reply to Mr. Simmonds' letter in your issue of June 10, I should like to point out, that the "proviso of a certain minimum speed" in his original letter of April 8 had not escaped my notice, but "given this minimum speed is it fair and reasonable to assess the comparative commercial efficiency of an aeroplane—to use Mr. Simmonds' own words—simply by the factor load carried per h.p.?"

We contend it is not and apparently Mr. Simmonds agrees with us, because he says now, that no potential purchaser looks solely at the factor, but will also see that the top speed is adequate for the work in hand. This can have no other meaning, than that in cases where the factor load carried per h.p. is equal, the machine with the higher top speed will be preferred.

Now here lies the quintessence of the question. Our propaganda formula has no other meaning than to give an approximate idea of the value of the aeroplanes in consideration. As soon as it comes to making a detailed analysis of all the qualities of the machine, the potential purchaser will go further; not only load carried per h.p. and top speed are then of interest, but also flying qualities, landing speed, passenger's accommodation, amount of luggage room, general accessibility, installation, and dimensions of the petrol system, and what not!

Now Mr. Simmonds' opinion is, that instead of our formula: useful load per h.p. \times top speed, another figure of merit should be used, being: total load carried per h.p. \times top speed.

From the constructors' point of view, this may be interesting, but for the user of the aeroplane it has little value, because it does not give an insight in the point which interests him: how much paying load, fuel and crew can I carry?

Taking two machines with the same figure of merit according to Mr. Simmonds, but of which one has a structure-weight that is relatively considerably larger than that of the other, these may be equally good as aerodynamical propositions, but from the user's point of view there would be a difference.

Of course the possibility exists that in applying our formula to two entirely different machines the resultant figure may be the same, but does not this remark apply as well to any other efficiency formula, or figure of merit? Take, for instance, Mr. Simmonds' own figure: total load carried per h.p. \times top speed.

Just as Mr. Simmonds applies to me, I should like to apply to Mr. Simmonds in similar circumstances when using his formula. But I am sure, that in doing so, we are both asking to be shown something which we know just as well ourselves, which is that in such cases a more detailed analysis of the machines and the conditions under which they must be used, is clearly indicated.

Mr. Simmonds also has a certain predilection for the term "paying load." So have I, but then only in conjunction with very definite data about the weight of the crew and the amount of fuel carried. As I explained in my previous letter our original formula was based on paying load, in so far that the comparison was made for machines equipped with fuel and oil to fly a given distance, but when sufficient data for this comparison are lacking, the user's interest should go to the total useful load.

In an editorial in the same number of FLIGHT, two new three-engined planes of approximately the same weight and nearly the same h.p. are compared, one having a paying load of 2,260 lbs., while the other has nearly 1,000 lbs. more. However, the total useful loads show only a difference of about 400 lbs. Now where is the usefulness of the term "paying load" if this were not taken in account?

I really think that the whole difference of opinion between Mr. Simmonds and ourselves arises from the fact, that we are looking at the question from different angles.

Our formula is intended for the aeroplane-user, whose interest should be concentrated on £ s. d. in order to get as quickly as possible to airline-running as a paying proposition.

Mr. Simmonds seems to look at the question more from the point of view of the student of design.

Eventually this will lead to the same result, but as long as there are differences in structure weight, in wing efficiency and so on, we believe that the user of the aeroplane is primarily interested in the question of how to carry the biggest useful load per h.p. at the greatest speed.

I must plead guilty to an expression which leads itself to misunderstandings.

Mr. Simmonds is perfectly right in stating that our formula does not give as a result the overall $\frac{L}{D}$, whereas his figure

of merit, total load (weight) carried per h.p. \times top speed, is directly indicative of that ratio. However, in present-day construction, and with the restrictions necessitated by the generally accepted rules about the static strength of the structure, by the imposed minimum rate of climb, etc., it is equally clear that one machine cannot be far better than another, when compared on the lines of our formula, if the "finesse" of that particular machine were not better too.

I used the word "indicates" in the sense of "points to it," and hope Mr. Simmonds will not forget that I am slightly handicapped in this discussion by having to express my thoughts in a foreign language.

Anyhow, this question does not touch the essential points which I hope to have made clear now.

B. STEPHAN

N.V. Nederlandsche Vliegtuigenfabriek
"Fokker," Amsterdam.
June 17, 1926.

AEROPLANE UNDERCARRIAGES

[2138] I noticed in the recent numbers of FLIGHT a mention of several "landing chassis" being used for "up-to-date aeroplanes."

I should feel morally satisfied if you would call your readers' attention to the fact that these "landing chassis" are nothing but a copy of the system I patented some fifteen years ago.

It is true that my patents have expired, yet I should be glad if this point could be mentioned, as it is only fair to an inventor to acknowledge his work.

FOR R. ESNAULT-PELTERIE,
Paris, June 18, 1926. M. L. DEMANET

WRIGHT NOT WRONG

[2139] We note on page 298 of your issue of May 20, in your paragraph on Commander Byrd's Polar Flight, the statement "When, during the memorable flight of Commander Byrd, one of the engines failed to work, Pilot Bennett proposed to alight, the ice-iles allowing a safe landing." This statement is incorrect in that all three of the Wright Whirlwind engines functioned perfectly throughout the 16 hours 3 mins. of the flight to the Pole and back, as evidenced by the attached photographic copy of the radiogram from Commander Byrd to the Wright Company.

What probably led up to this incorrect statement was that the starboard oil tank developed a small leak near the top, and they noticed a leakage of oil coming from the nacelle of the starboard engine. Watching this leak, they saw that it did not increase, and they continued to fly this engine at normal power output until the end of the flight. The oil consumption of the Wright Whirlwind engines on this flight was so low that even with the leaky oil tank they had sufficient oil for this engine right up to the end of the flight, and as a matter of fact they had six gallons of oil in this tank at the end of the flight. The oil consumption for the port engine was 2½ U.S. gallons, and for the centre engine 1½ U.S. gallons for the 16-hour flight.

I appreciate that in preparing your story so soon after the completion of the flight that this statement in FLIGHT was by no means intentional on your part, but the performance of all three of these Wright Whirlwind engines on this trip was so uniformly excellent that I know you would not like to have your readers get a false impression of their performance.

WRIGHT AERONAUTICAL CORPORATION,

C. G. PETERSON

June 10, 1926

[We have very great pleasure in correcting any erroneous impression which may have been created by the paragraph in question. The statement was based on what meagre information was available at the time of going to press, and in the very full account of Commander Byrd's flight, which we gave in our issue of June 3, it was made quite clear that the Wright engine continued to run perfectly throughout the trip, and that such little trouble as was experienced was in no way connected with the engine itself, but was due to a leaky oil tank, the leak being caused by a rivet dropping out.—ED.]

METAL-CLAD AIRSHIPS

[2140] I read with interest Mr. Upson's paper on "Metal-Clad Airships." As far as I can see, there is nothing new in his design. In fact, not so much as was incorporated in my corrugated system of airship and aeroplane construction exhibited at the *Daily Mail* Exhibition in April, 1907, photographs of this system exhibited on my models were extensively published and favourably commented on in the technical press at that date by the late Hon. Charles Rolls who said in the *Daily Mail*, when writing an account of the exhibits, that my system would be extensively used in the future construction of aeroplanes and airships. Mr. Berriman then Technical Editor of *FLIGHT*, and other writers on the subject also made favourable comments. The highbrows at the R.A.F. told me a metal machine would never rise from the ground, and if it did, it would smash (as they saw my metal machine smash in the competition) when it came to the ground, because, they thought, the machine would be too rigid, their ideas about an aeroplane being something like a sheet on a clothesline, and as far as I can see, the technical staff's ideas on engines at the Air Ministry now are on a par with the above. Professor Junker adopted the design in 1918 for aeroplanes, and it appears to me that Mr. Upson

and Commander Barnley are now developing the system for airships in 1926. The airship hull I exhibited in 1907 was built of 30 S.W.G. corrugated aluminium, the sheets were double clinched together and riveted, which made the hull very rigid longitudinally, also gas and watertight, longitudinal bracing being unnecessary. The radial ribs are designed on a corrugated tension system, which is very strong, light and absolutely rigid. Since those days I have improved the design, and discovered a new system of constructing airships. A metal ship of any size can be built up from a platform about 15 ft. from the ground, no elaborate scaffolding being necessary. This reduces the cost very considerably, and facilitates the speed of construction, because the workmen have not to clamber about and work on dangerous scaffolding. The process of construction being automatic, almost like that employed in the construction of a Ford car. I shall be pleased to give information to any firm interested in metal construction. In conclusion, I would draw the attention of pioneers of Flight to a letter published in this week's *Autocar*, June 18, on "Nature's Speed Models and other Flight Matters."

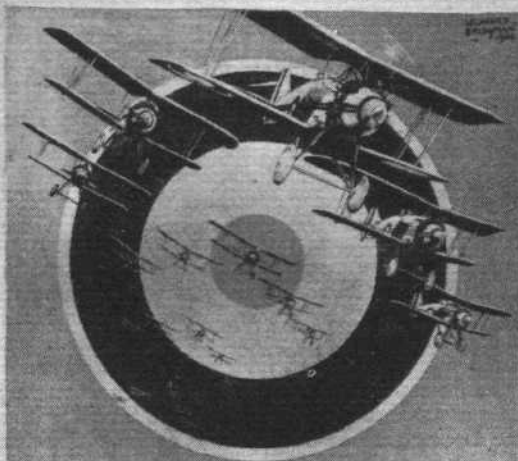
WILLIAM COCHRANE

London, June 19, 1926.



A NEW GLOSTER SINGLE-SEATER FIGHTER : We show above two views of the "Gorecock," a fast single-seater fighter designed by Mr. H. P. Folland, of the Gloucestershire Aircraft Co. This is an "external view only" machine, so we can only draw attention here to its clean design, and the neat wing radiators. It is fitted with a direct-drive Napier "Lion" engine.

FLIGHT PICTORIAL REVIEW OF R.A.F. PAGEANTS 1920-1925



ROYAL AIR FORCE
DISPLAY
HENDON
SATURDAY · JULY 3.



AND
OUTLINE OF 1926
DISPLAY



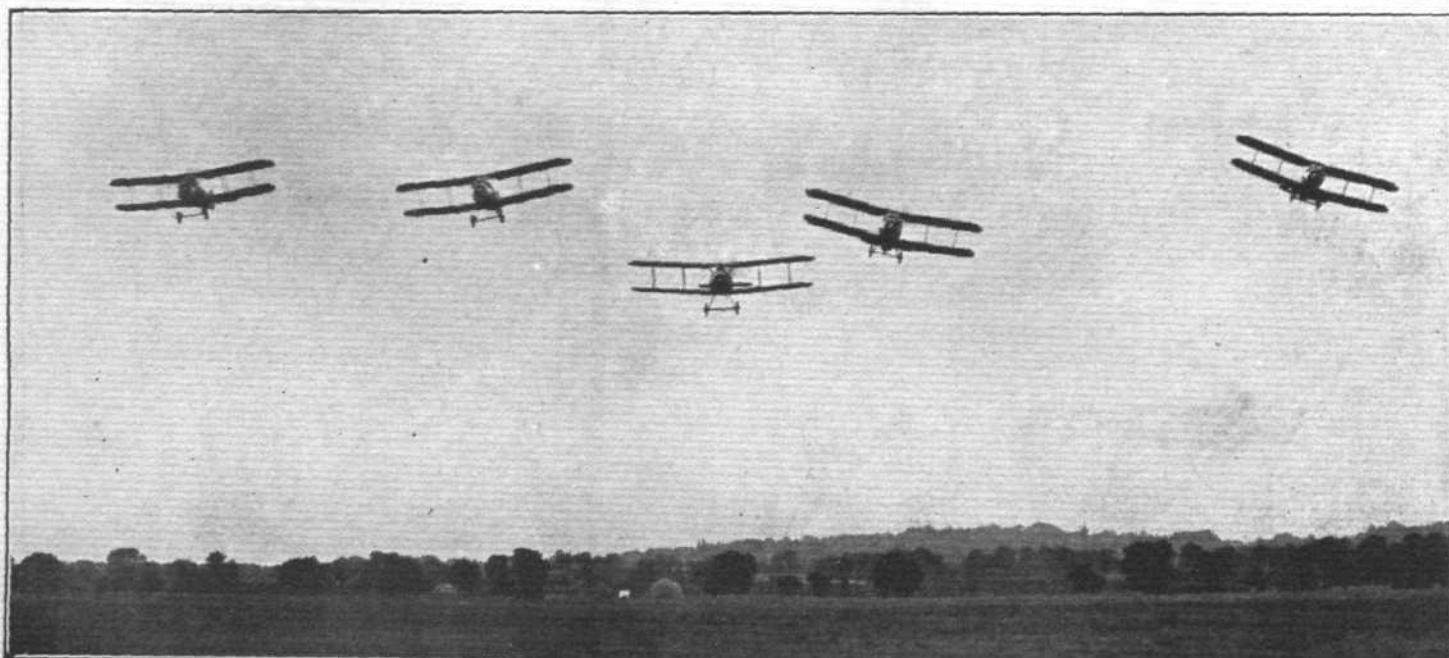
THE R.A.F. DISPLAYS

By MAJOR F. A. DE V. ROBERTSON, V.D.

THIS year, owing to the results of the strike, the Royal Air Force Display takes place before the Royal Tournament. Usually the Tournament comes first, and that is really the logical order of events. The Aldershot Searchlight Tattoo also precedes the Tournament this year, and the Tattoo and the Display are on somewhat the same footing. Neither the Army nor the Air Force are satisfied that they can give a show which does them justice inside the walls of Olympia, and therefore each organises an extra show out of doors. The argument, however, applies far more forcibly to the Air Force than to the Army. What with physical drill and musical rides, bridge-building, man-handling of guns, and jumping of horses, the soldiers do put up a beautiful performance in Olympia, which really gives the public some idea of the results of disciplined work. The Tattoo in consequence becomes largely a pageant, in the true sense of the word. It is largely concerned with military history, antique uniforms, and the like. Incidentally, one of the impressions given is that the British soldier at many periods of the past was much more sensibly, as well as more effectively, garbed than he was in such recent days as during the Crimean war, or than he is today, when he wears the full dress tunic. Tightness of uniform has for many years past been the ideal of the British Army. This point is not altogether without relevance in "Flight," because the Royal Air Force has inherited that tradition. An airman always looks as if he must certainly burst his buttons or his seams if he were to attempt to tighten a nut; while it must be a feat of painful contortion for an officer to get into a cockpit in his tight riding breeches. The South African Air Force, at the request of the pilots, has adopted "the garment known as plus fours," and is doubtless happier and healthier for the change.

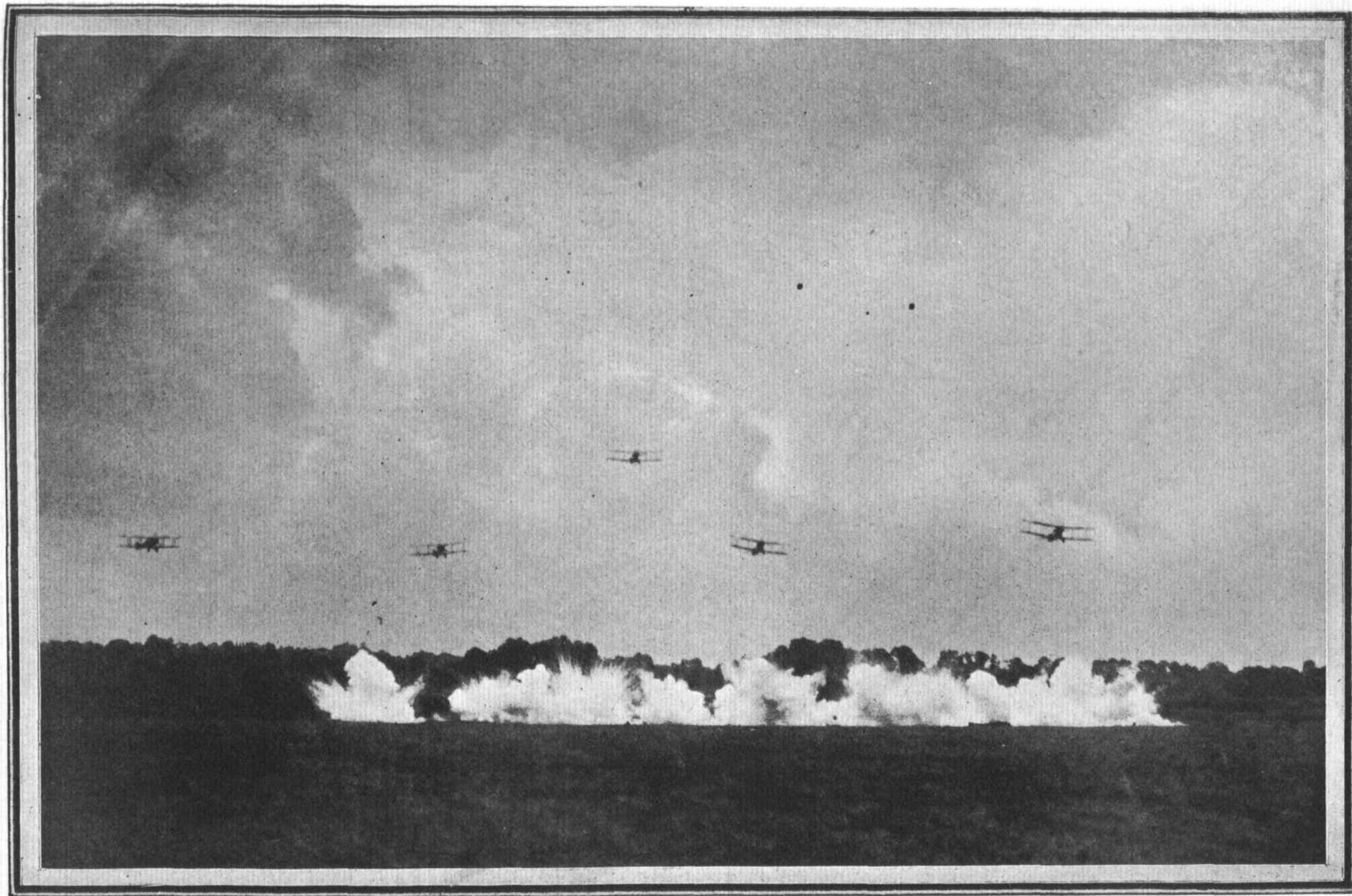
The R.A.F. Display is emphatically not a pageant, and, happily, it is no longer so denominated. It is the consummation of the year's training. It shows to many thousands of taxpayers in the capital what the youngest service is able to do. Lastly, it serves to swell the funds of the service charities. In each of these aspects it is a sequel and a complement to the Tournament. There must, of course, be a good deal of repetition of events from year to year. That in no way lessens the attractions of the Display. The same thing occurs each year at the Tournament, but the public never tires of either. Probably, not very many people go to the Tournament more than once, and no one can go to the Display more than once per year. He must, indeed, be a *blasé* soul who tires of seeing the musical drive of the R.H.A., or the air drill of the crack fighter squadron once a year. It would be interesting to hold a plebiscite to discover whether the "Rocket Troop," or the "Cuckoos" are the more popular with the people of London. I wrote the words "Cuckoos" because everyone knows that it was the call signal of No. 25 Fighter Squadron last year, and it was also used at the recent practice at Kenley. But, actually, the call signal to be used for the squadron this year at the Display is to be "Mosquitoes." If they are allowed to stick to that, well and good. It suggests buzzing and biting. The point is to get the public to take a personal interest in the crack squadrons of the air force, and for that purpose a permanent call signal should be adopted. People do not wax enthusiastic about mere numbers. No. 25 is soon forgotten, whereas "Cuckoos" or "Mosquitoes" will stick in the memory. The public always prefers zoology to mathematics.

To the thoughtful observer, however, the R.A.F. Display each year shows points of development. Last year, comment



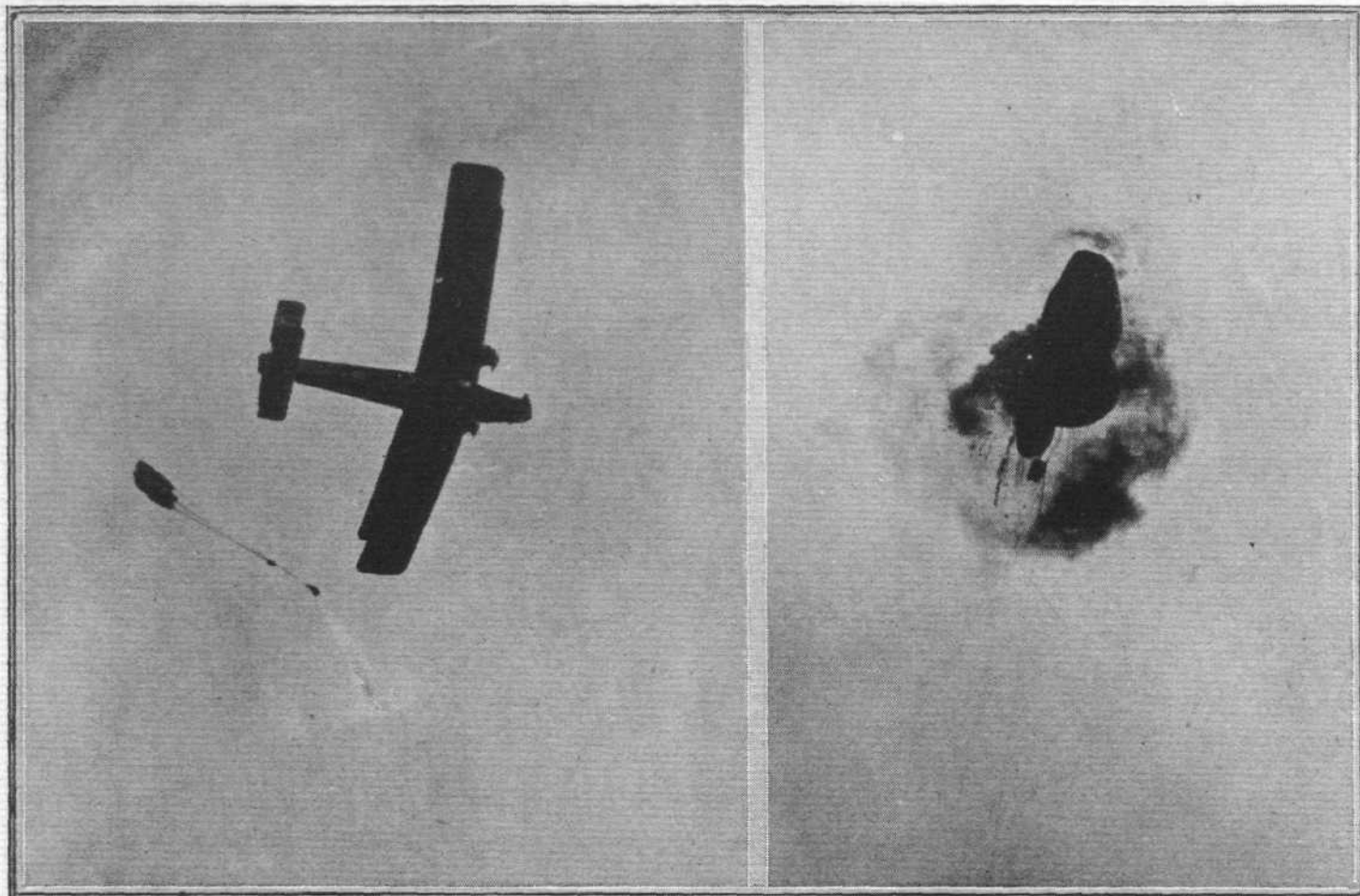
THE FIRST R.A.F. "PAGEANT," 1920 : The five Sopwith Snipes shown above were responsible for a very beautiful display of aerobatics in formation, in which they performed numerous evolutions in perfect unison.

["FLIGHT" Photograph



["FLIGHT" Photograph]

THE FIRST R.A.F. "PAGEANT," 1920 : Perhaps the most impressive event of the first year's programme was when a flight of five Bristol Fighters gave a demonstration of trench bombing, as depicted above. Flying in formation, the five machines swooped down on to the trench, firing their machine guns, and then releasing their bombs with realistic effect.



[“ FLIGHT ” Photographs

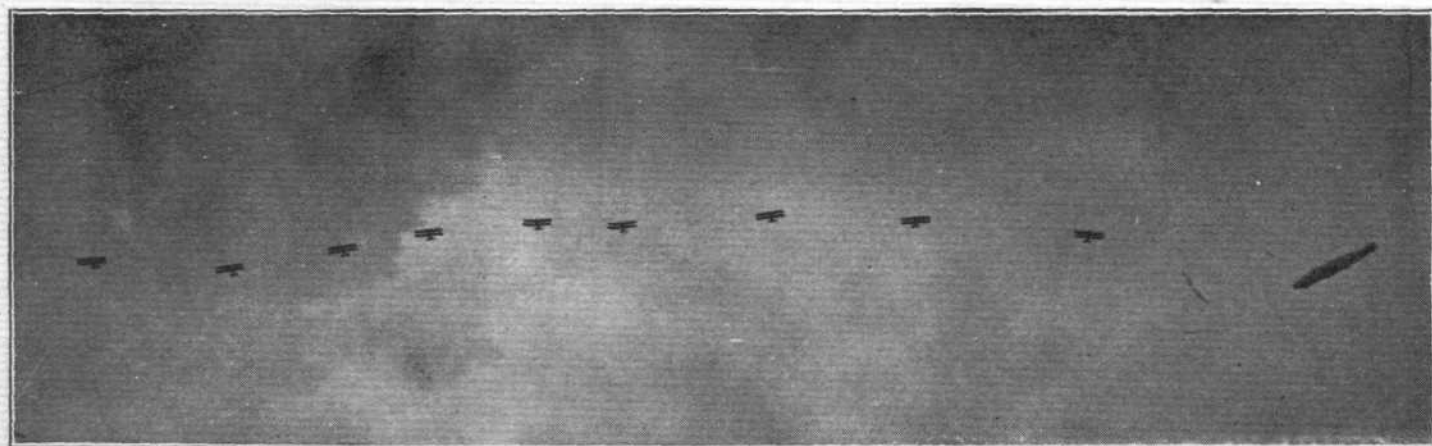
TWO “ THRILLERS ” AT THE 1920 R.A.F. “ PAGEANT ” : On the left is seen Miss Sylva Boyden making a descent in a “ Guardian Angel ” parachute from a Handley Page Bomber. Another exciting event, shown on the right, was when a kite balloon was attacked by Flight-Lieut. Hazell, D.S.O., M.C., D.F.C., and brought down in flames.

was made in FLIGHT on the sudden and striking improvement made in the drill and in the accuracy of the low bombing. Air Vice-Marshal T. I. Webb-Bowen had then been in command of the Inland Area for just over a year, and novel methods had evidently been at work. Further progress will be noticeable on July 3. The Air Force is still in a state of development, and as yet there is nothing cut and dried about its method. The manual of Air Drill is still only provisional, and it lays down principles of drill rather than details. The best methods of arriving at efficiency are still being worked out by experiment.

This year, further advance will be seen in the manœuvring of complete Groups in the air. Last year, a formation of four bombing squadrons was seen, and that event will be repeated with improvements.

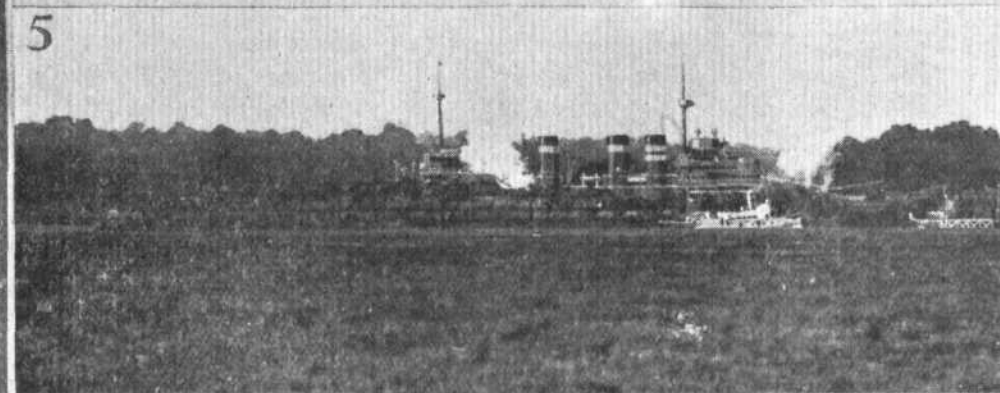
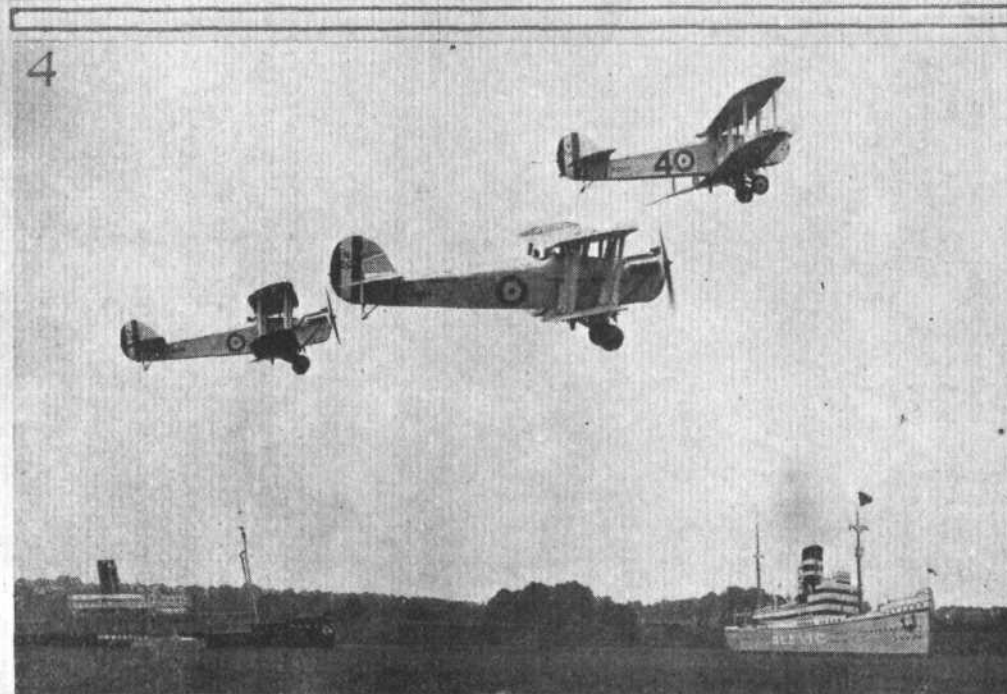
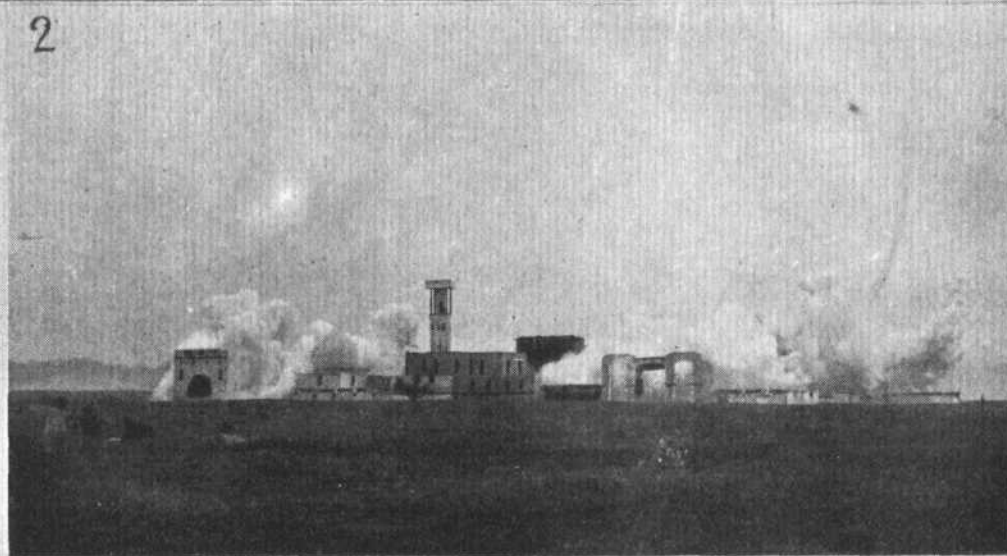
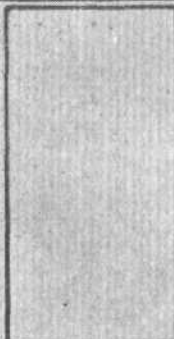
Neither the Group of Fighters nor the Group of Bombers is a permanent organisation of the R.A.F. Each of these groups has been mobilized solely for the occasion. A whole group in the air is an imposing sight.

A new feature of this year's Display will be the manœuvring of a Group of six fighter squadrons, which will be an entire novelty. The ordinary man in the street will probably gape at it with a sense of megalomania, much as he would gape at an unusually large elephant at the Zoo. He may even leave Hendon with the impression that the Royal Air Force is a very big concern, and that we need not worry much about increasing it. More thoughtful observers will see in this item a development in preparedness for air defence, and will study with care the handiness of the Group in changing direction, &c. Probably, we shall have to wait



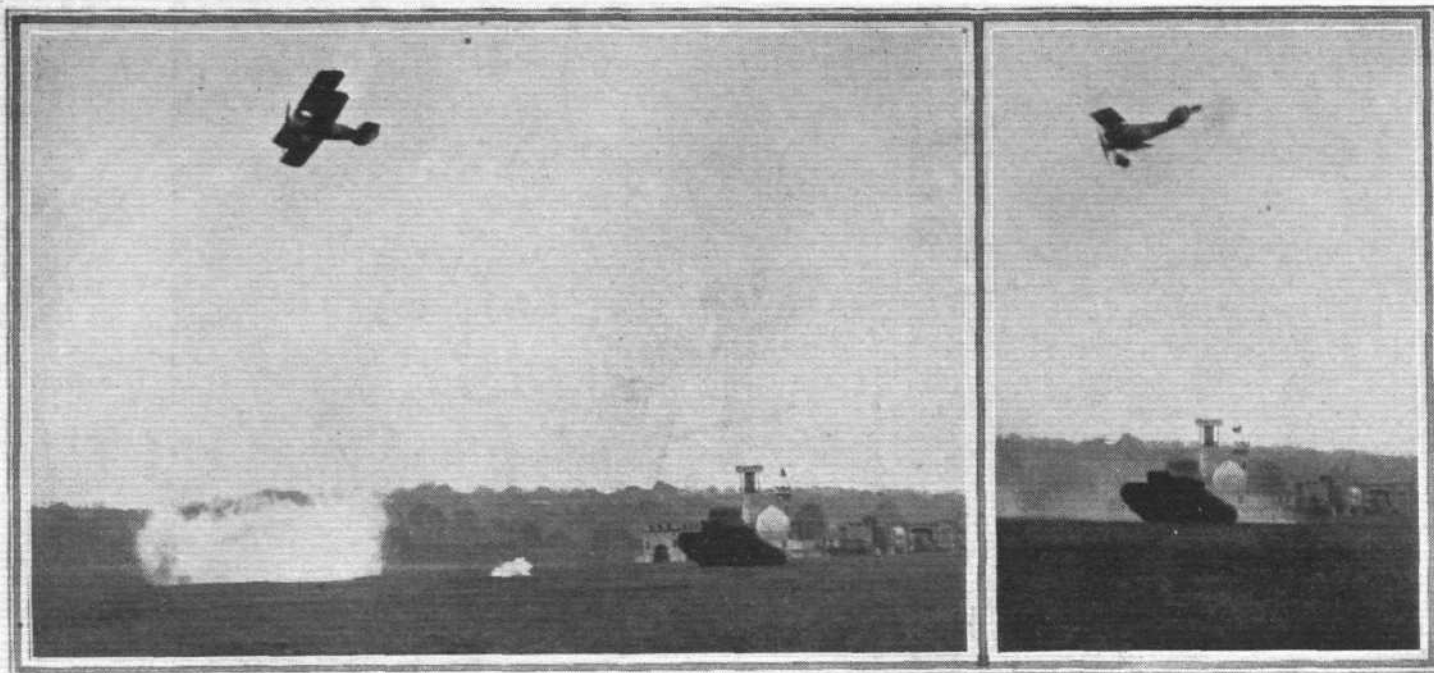
[“ FLIGHT ” Photograph

THE SECOND R.A.F. “ PAGEANT,” 1921 : On this occasion the lighter-than-air side service flying was represented by the rigid airship R.33, which cruised overhead throughout the afternoon's programme; and also assisted in controlling (by wireless) the traffic to and from the aerodrome. Our picture shows the R.33 and a formation of Bristol Fighters.



"SET PIECES" AT THE R.A.F. DISPLAYS: At each of the previous "Pageants" and Display a grand finale was given in which some episode relating to aerial warfare was realistically enacted, viz. :—(1) 1922, Bristol bombers bombing the enemy village of "Scrapper Plain." (2) 1922, an Eastern Drama; the "Wottnott" stronghold after a visit of bombing aeroplanes. (3) 1923, a small military post defending an important bridge escape on a Vickers' troop carrier, having previously placed time charges to destroy the bridge. (4) 1924, the Raider raided. The enemy merchant cruiser "Selvic" is caught in the act of holding up the "John Henry," of Newcastle, and is eventually sent to Davy Jones by a flight of Blackburne "Dart" torpedo planes. (5) 1925, an enemy cruiser, hiding up a tropical river, is discovered by a Supermarine "Seagull," which calls up by wireless a flight of Fairey "Flycatchers" and a few Avro "Aldershot" and Vickers' "Virginia" bombers, which in turn destroy the enemy cruiser. Scenic effects by Scrap Aeroplanes, Ltd.

["FLIGHT" Photographs]



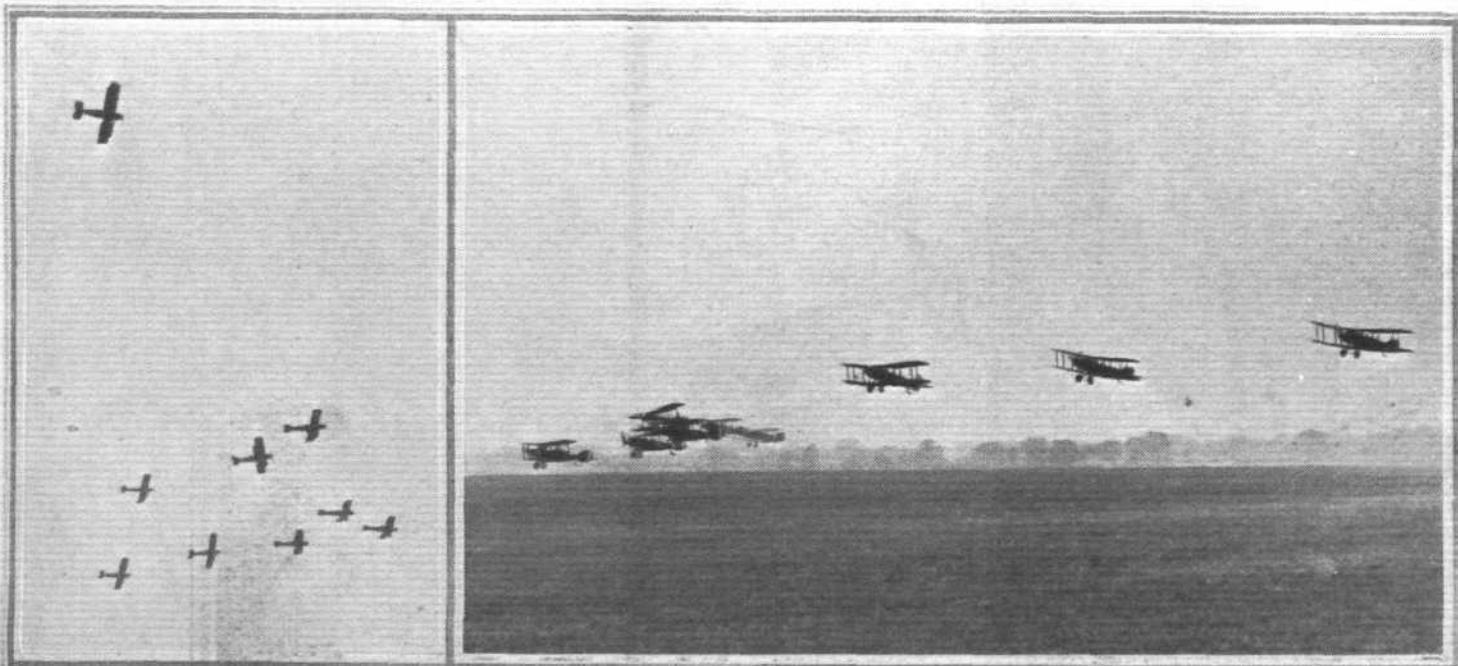
[“ FLIGHT ” Photographs]

THE THIRD R.A.F. “ PAGEANT,” 1922 : A much-appreciated event on this year’s programme was “ bombing a tank ” by four Sopwith Snipes, in which the “ bombs ” were clearly visible during their fall and subsequent hit.

for the next war to teach us what size of formation it is really best to have manoeuvring at the same time under a single command ; and one wonders whether any one leader, when himself moving at 150 miles an hour, would be able to handle more than a Wing, to the best advantage. Yet to provide a stationary H.Q. in the neighbourhood of an aerial battle seems a problem as insoluble as the evolution of a satisfactory helicopter. Are we really going back to the days of Ancient Rome when the business of a General was (we imagine) to lead the charge and to strike down with his own hand the foremost champions of the enemy ?

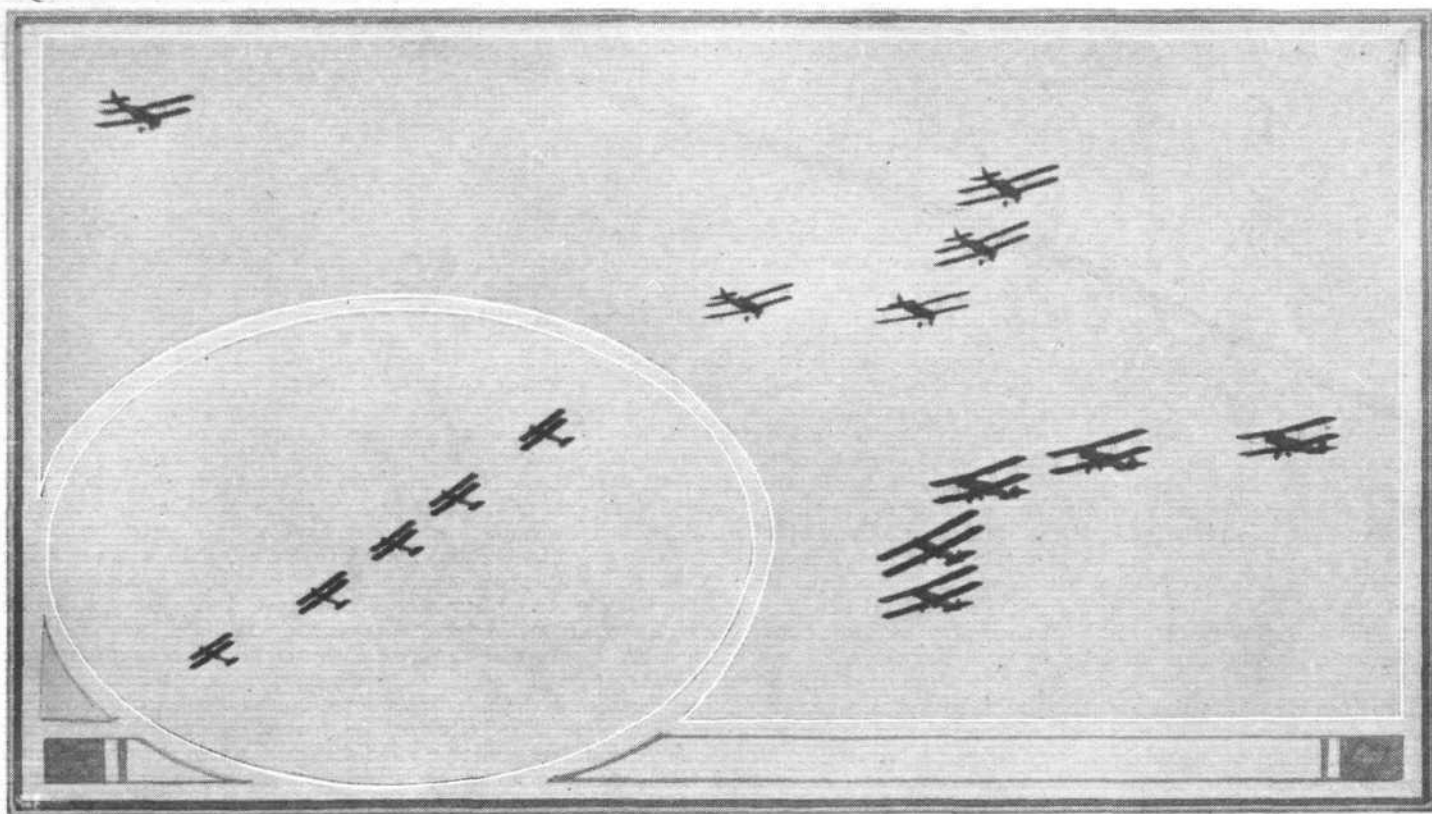
There is one respect in which the Display reached a zenith in 1924, began to deteriorate last year, and has fallen off lamentably in the present programme. The point in question is the representation of the work of the three main divisions of the Royal Air Force. These divisions are :—first and foremost, Air Defence ; secondly, Army Co-operation ; and thirdly the Coastal Area which includes the Fleet Air Arm. It is well that the taxpayer should be made to realize that the Air Ministry has to provide squadrons to perform three

totally different functions, and that, though the Admiralty pays a good deal of the cost of the Fleet Air Arm, the War Office does not contribute anything. As for the coastal defence machines, their function would seem to be more concerned with marine defence than with the other branches of R.A.F. work. All these go to swell the Air Estimates, and tend to create a popular impression that the Air Defence Force which Air Marshal Sir John Salmond commands is a very expensive force. For this reason as well as for other obvious reasons, it would be good policy to use the Display as an opportunity of forcing upon the public attention the three-fold duties for which the service side of the Air Ministry is responsible. This was done well in 1924, less well in 1925, while in the programme for the present year it appears that it is not to be done at all. The Army Co-operation Squadrons get their event, namely, picking up messages from the infantry ; but the event takes place before lunch when the number of spectators is not at its greatest. The Coastal Area is not represented in any of the events, and in the parade of new and experimental types



[“ FLIGHT ” Photographs]

THE THIRD R.A.F. “ PAGEANT,” 1922 : Some fine formation flying was executed by No. 24 Squadron (Kenley) on Bristol Fighters, their take-off in formation (shown above, right) creating much enthusiasm.



["FLIGHT" Photographs.]

THE FOURTH R.A.F. "PAGEANT," 1923 : A distinct advance was seen in this year's formation flying, both in quantity and quality. Ten D.H. 9a's from No. 39 Squadron (Spittlegate) execute some close evolutions.

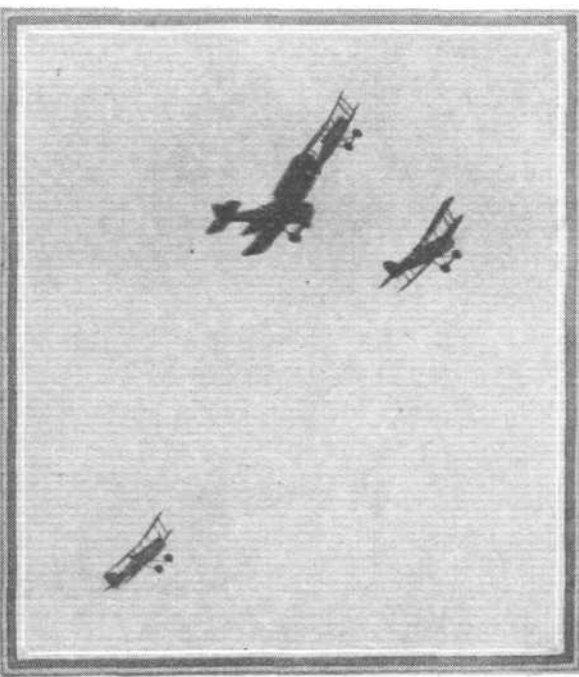
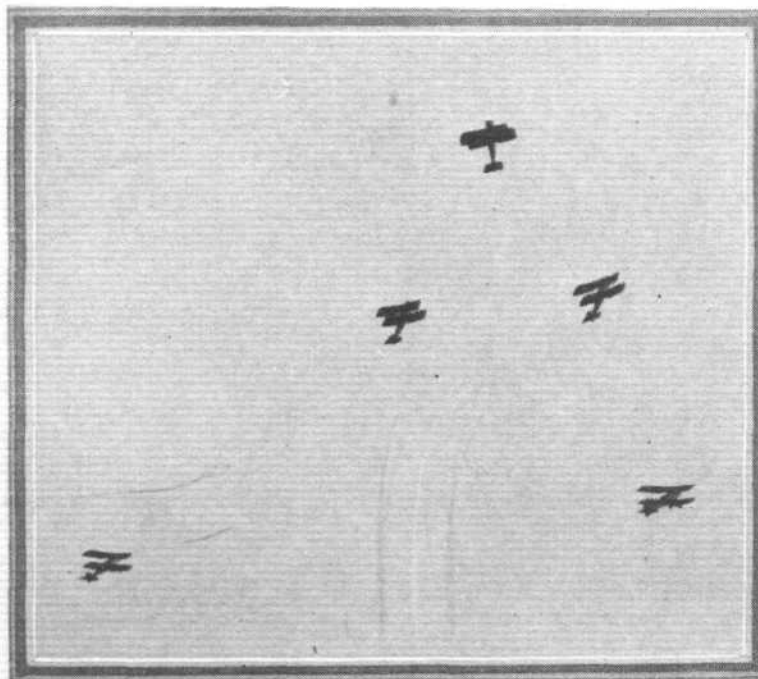
only three machines are of types with which the Coastal Area is concerned. This, from every point of view, is to be deplored.

On the other hand one new event is to be warmly welcomed, because it gives recognition to the citizen air fighters. The five flying schools of Bristol, Coventry, Glasgow, Leeds, and London, at which officers of the Air Force Reserve receive flying training, each put up one of their pupils to race, the machines for all being Bristol Fighters. It happens that all five competitors are ex-officers of the R.A.F. with war service, but all have returned to civil life. One has a Military Cross, another an Air Force Cross, while the best known of all is Flight-Lieut. W. W. Wakefield, the captain of England's Rugby XV. Wakefield has so often appeared as the incarnation of England, that we may feel certain an intense effort will also be made by the Glasgow representative (who bears the

very Irish name of O'Grady) to beat the champion from the Edgware school. In future years it is to be hoped that there will be events for the squadrons of the Special Reserve and Auxiliary Air Forces.

The Air Ministry race also gains in interest this year, because the champions of the various directorates are to use service fighter machines instead of light aeroplanes. A race between one Siskin, three Woodcocks, one Gamecock, and one Flycatcher, should provide some thrills, and will be very interesting to the aircraft industry. From the engine point of view, two Jaguars will compete against four Jupiters.

In one respect the arrangements for the Display should be much better this year than ever before. Hendon is now a service aerodrome, and considerable alterations, and improvements have been put in hand. It is not yet possible to say



["FLIGHT" Photographs]

THE FOURTH R.A.F. "PAGEANT," 1923 : Five S.E.5a's gave a wonderful display of simultaneous stunting, such as looping in V-formation, as shown above on the left, and zooming in close formation.

whether these changes will benefit owners of cars. In past years it has been better, that is quicker, to leave one's car behind and queue up for the tube or bus. At any rate Colindale station is extremely convenient, and the Underground com-

pany has now plenty of experience in getting large crowds away from Hendon in good time. This year events start at noon, and it will be more than ever advisable to get to Hendon in good time. It will probably be advisable to take umbrellas.

THIS YEAR'S DISPLAY

THE Seventh R.A.F. Display fixed for Saturday next, at Hendon, promises to be one of exceptional interest. It is anticipated that the number of spectators present will be a record one, for apart from the convenience in getting to and from the aerodrome afforded by the "Underground" service almost to the aerodrome gates, considerable improvement has been effected at the aerodrome itself in connection with the accommodation of spectators, etc.

Their Majesties the King and Queen have intimated their intention of being present and His Royal Highness the Duke of York has also announced that he will attend. Other royal visitors will be their Majesties the King and Queen of Spain and His Imperial Highness Prince Chichibu of Japan, who will be accompanied by the Baron Hayashi.

The Prime Minister cannot attend, but the Cabinet will be well represented. Amongst those who have already accepted invitations are the Marquess of Salisbury, the Lord Chancellor, Earl Balfour, Sir William Joynson-Hicks, Earl Birkenhead, Sir Philip Cunliffe-Lister, Sir John Gilmour, Sir Arthur Steel-Maitland, Viscount Peel, and Sir Douglas Hogg.

The Secretary of State for Air will, of course, be there, as will Sir Philip Sassoon, whilst the Parliamentary enclosure has booked some 200 members.

The programme which has been arranged for the present Annual Display (and which commences at noon) contains many new and interesting features while still retaining several of the events which have proved to be popular in the past.

The progress of service flying will be illustrated by two events in which large formations of day bombing aircraft and single-seater fighters will take part respectively. The former consists of air drill by four day bombing squadrons of the home

defence force (Squadrons 11, 12, 39 and 207), in which 36 aircraft (Fairey "Fawns" and D.H. 9a's) will carry out the latest evolutions in mass formation flying. The second event will be a demonstration by 6 squadrons (Nos. 19, 23, 29, 32, 41 and 56) of single-seater fighters, comprising 54 machines (including Grebes and Siskins). This exhibition is an entirely new feature and the number of aircraft taking part is the largest group which has ever flown together at one time at the Display.

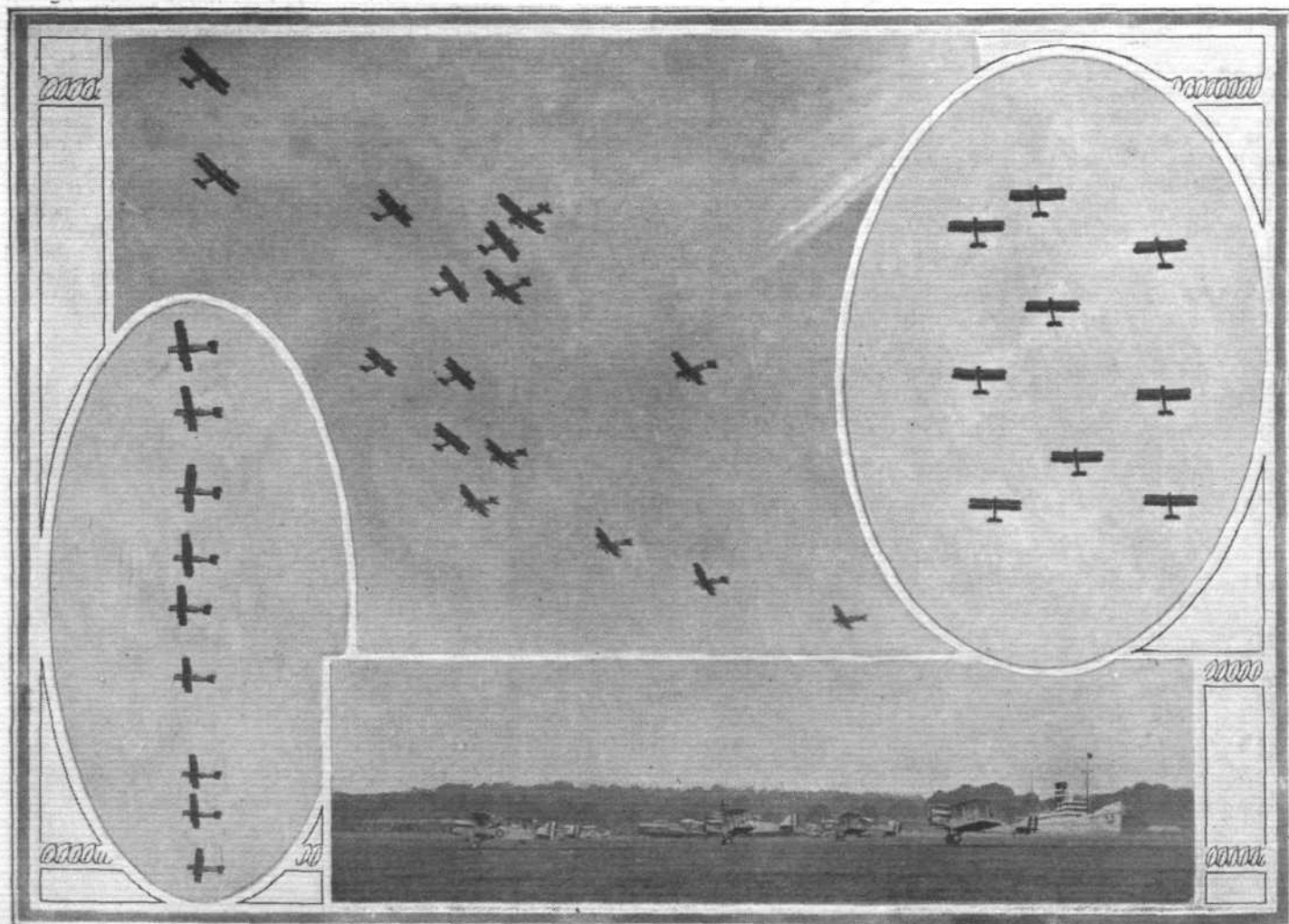
An event which will have a popular appeal will be squadron drill carried out by wireless telephony, orders being given by the Squadron Leader from his machine in the air, or from the wireless ground station.

The call sign of No. 25 Fighter Squadron, which will carry out this event, is "Mosquito," while the Ground Wireless Station with which it keeps in touch is "Fantail."

There will be a R.A.F. Reserve Race by the five schools, a School Instructors competition (Avro 504K), and an Air Ministry Race (3 Hawker Woodcocks, 1 Gloster Gamecock, 1 Fairey Flycatcher and 1 Armstrong Siskin).

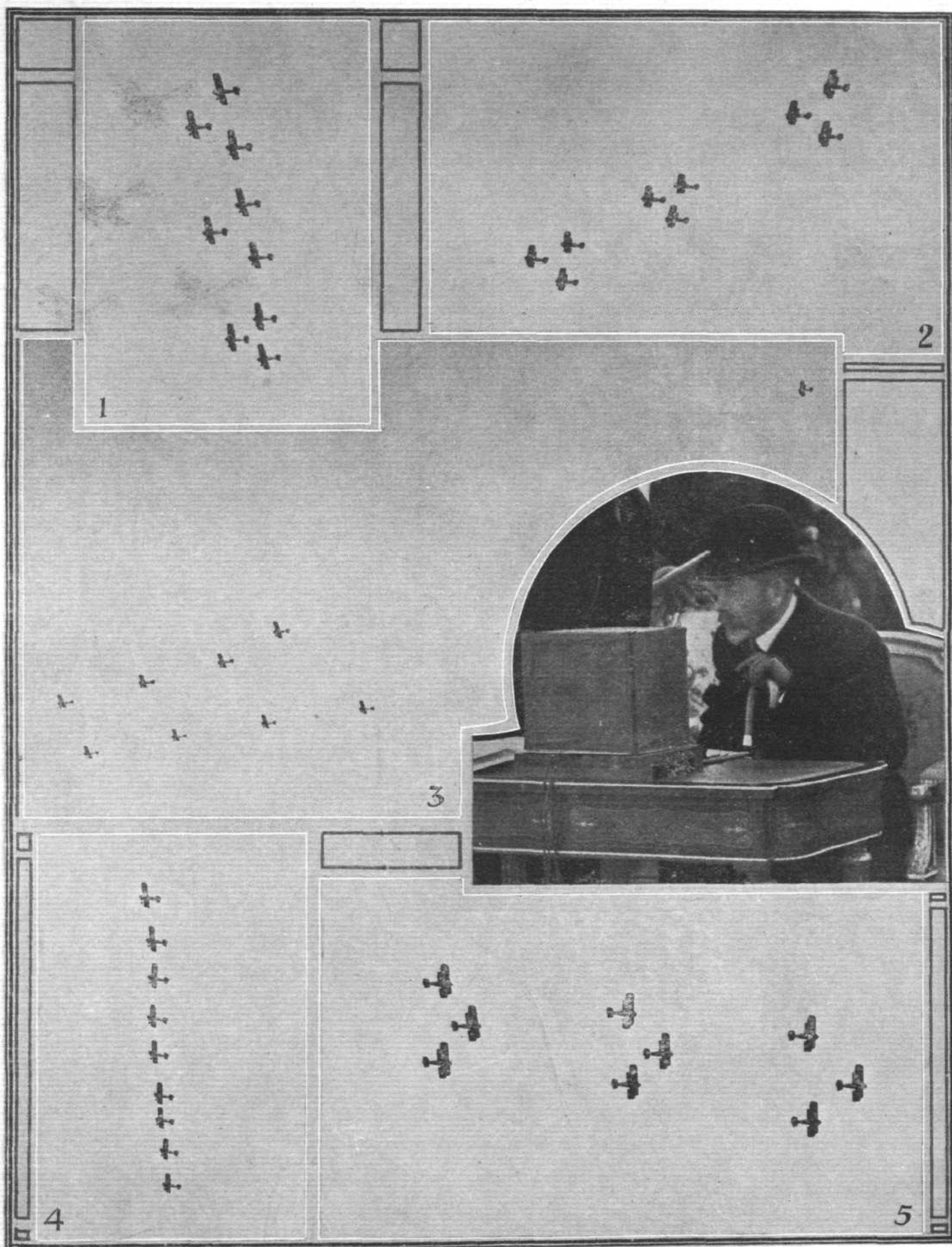
Other events will comprise a Message-picking-up competition (Army Co-op. Sq.), Low-bombing competition (19 Sq., Grebes), and the flypast of new and experimental machines, illustrations of which will be found on subsequent pages. There will, of course, be a "Set Piece," while the first and last items on the programme consist of the start and finish respectively of a Long-Distance Race for Handley Page Hyderabad and Vickers Virginia bombers. Altogether, some 180 aircraft will take part in the Display.

The group of six fighter squadrons which will manoeuvre together at the Display gave a demonstration at Hendon on June 25. We will not anticipate the pleasures of the day



[“FLIGHT” Photographs]

THE FIFTH R.A.F. "PAGEANT," 1924 : The most thrilling event of all those presented up to this fifth year was certainly the demonstration of air drill given by two Squadrons (Nos. 39 and 207) of D.H.9a's, 18 machines in all, a slight impression of which is shown above.

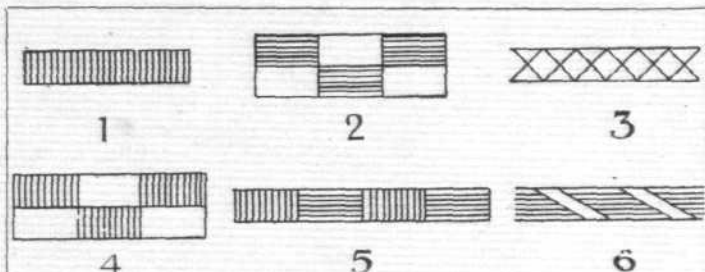


[" FLIGHT " Photographs]

THE SIXTH R.A.F. "DISPLAY," 1925: No longer a "Pageant," but a "Display," its sixth birthday was a memorable one, for H.M. the King gave the word of command, from the Royal box, by means of wireless to No. 25 Fighter Squadron (Gloucestershire "Grebes") under Squad.-Leader A. H. Peck, during their wonderful display of squadron drill. His Majesty is shown above speaking into the microphone. Some of the evolutions carried out, also shown, were (1) "Flight Mass Line Abreast." (2) "Flight Mass Echelon to Port." (3) "Double Line Ahead" (immediately preceding the King's order). (4) "Line Abreast." (5) "Flight Mass Line Ahead."

itself by describing their beautiful and accurate evolutions, but may remark that they work in two wings, one wing consists of Nos. 41, 19 and 29, and the other of Nos. 56, 23 and 32 Fighter Squadrons. All these squadrons have fine records of desperate fighting in the Great War. It is gratifying to see a whole squadron of Gamecocks making an appearance, because at the Display last year a single Gamecock was in the parade of new machines. The re-equipment of the Defence Force is really not standing still.

The following are the devices painted on the sides and wings of the machines of each squadron, and by these the public will be able to identify the squadrons. In the following diagrams the heraldic custom of representing red by ver-



No. 41 Fighter Squadron (Siskins): one broad red horizontal band. Fig. 1.

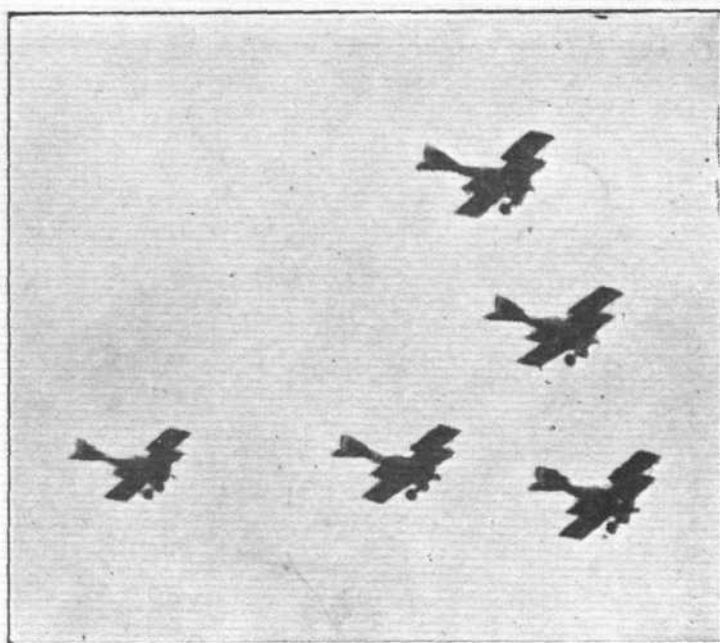
No. 19 Fighter Squadron (Grebes): one diced band of blue and white squares. Fig. 2.

No. 29 Fighter Squadron (Grebes): one band of black trellis work on a white ground. Fig. 3.

No. 56 Fighter Squadron (Grebes): one diced band of red and white squares. Fig. 4.

No. 23 Fighter Squadron (Gamecocks): one band of alternate red and blue squares. Fig. 5.

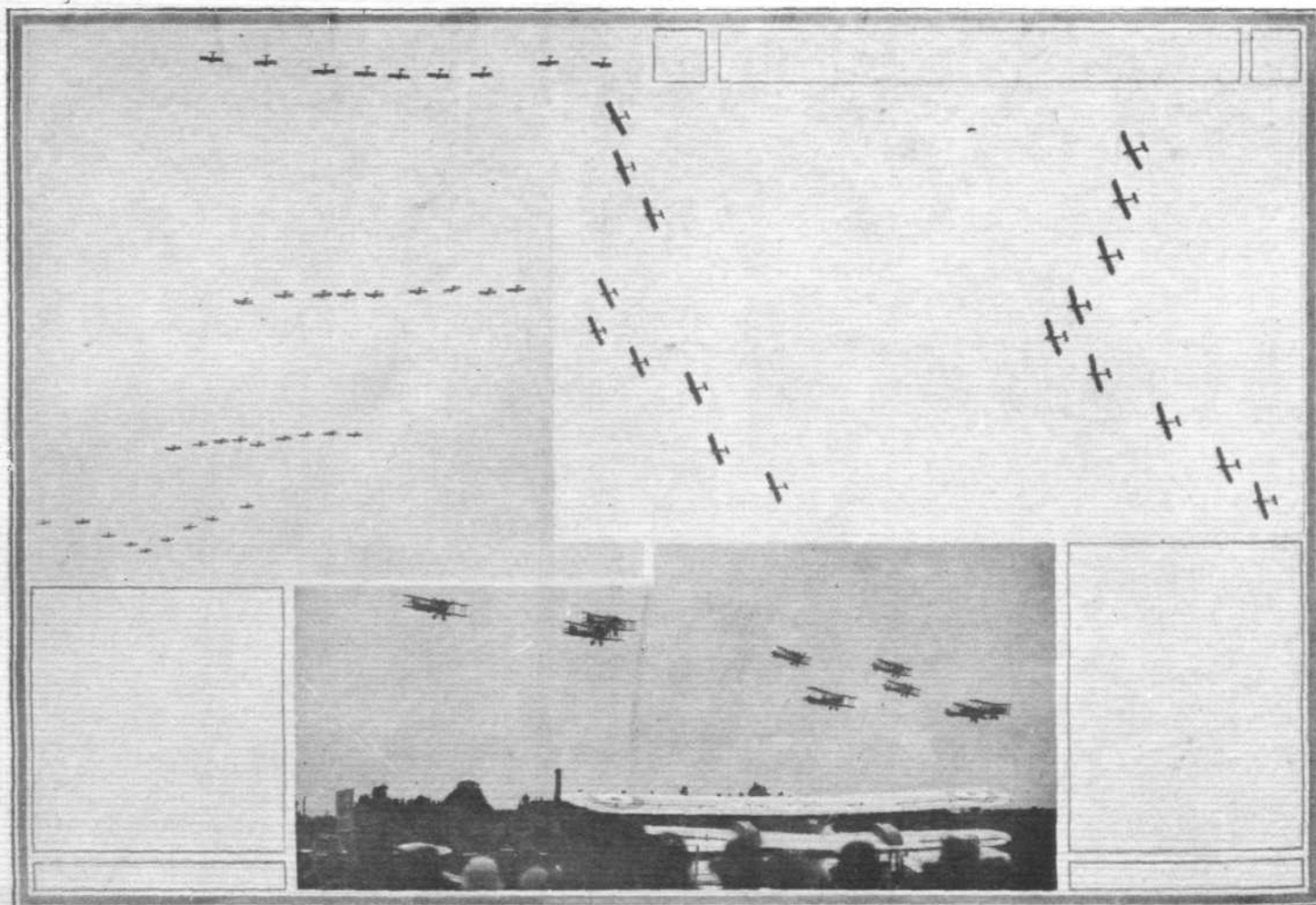
No. 32 Fighter Squadron (Grebes): one horizontal blue band with white diagonal bars across it. Fig. 6.



[“ FLIGHT ” Photograph]

AERIAL VISITORS FROM FRANCE: In the 1924 “Pageant” a French Escadrille of five Nieuport-Delage 29.C.1 “avions de chasse” flew over from France and took part in the programme.

tical lines and blue by horizontal lines has been adopted. These six squadrons it should be pointed out will not carry wireless apparatus. The drill by radio telephony, already referred to, will be carried out by No. 25 Fighter Squadron, whose aeroplanes (Grebes) are marked with two horizontal thin black lines.



[“ FLIGHT ” Photograph]

THE SIXTH R.A.F. “DISPLAY,” 1925: Eighteen machines performing evolutions in the air together was considered, in 1924, a wonderful display. When, in 1925, twice this number carried out simultaneous wing evolutions—well, one gasped for breath. Above we show these 36 machines (18 Fairey “Fawns,” Bombing Squadrons Nos. 12 and 100, and 18 D.H.9a’s, Bombing Squadrons Nos. 39 and 207) going through some of the evolutions.

AIRCRAFT TAKING PART IN THE 1926 R.A.F. DISPLAY

In all, 29 different types of aircraft will take part in the R.A.F. Display at Hendon on Saturday next, July 3. Of these, 12 distinct types (including some very nearly "extinct" types!) will be seen in the various manoeuvres, competitions, evolutions, races and exhibitions, while the remaining 17 types will only be seen flying past the enclosures in single file, and will not take part in any of the evolutions of the Display itself.

In the following pages we give photographs of all the types taking part in the Display itself as well as in the "Fly-past," with brief notes relating to each type. No reference is made to the rôle played by each type in the Display, as this can be ascertained from the official programme, the proceeds of the sale of which will be devoted to the Royal Air Force Memorial Fund, and which should therefore be purchased by every visitor to Hendon on the day of the Display.

In the space available it has, obviously, been impossible to give detailed descriptions of the various aeroplanes, even were

this permissible, which in most cases it is not for service reasons. We have, therefore, thought that it would be of more assistance to our readers if we gave a brief summary of the types, pointing out whether they are new or have been in service for a considerable time; the purpose for which each is used; characteristic features facilitating identification; and, lastly, a list of the squadrons of which the various types form the standard equipment. The latter feature particularly should be of assistance, since any reader interested in any particular type of aeroplane, seen either in the programme or in actual flight, can refer to our pages and from them find out which squadrons are equipped with that particular type of machine. In this way, it is thought, FLIGHT's "guide" to the machines will be supplementary to the official programme, as well as forming a useful souvenir of the 1926 Display, and a means of ready reference for future use. To facilitate reference the machines have been arranged in alphabetical order.

Armstrong Whitworth "Siskin"

Armstrong Siddeley "Jaguar"

This is a single-seater fighter which, in the Service type, has reached Series III, and experimentally even higher series numbers. Without going into details it may be said that the machine is produced both in wood and metal. Variations of the type have taken part with success in the King's Cup Race, and yet another version was exhibited at the last Paris Aero Show. The squadrons which are equipped with this machine are No. 41 (Fighter) Squadron, Northolt, and No. 111 (Fighter) Squadron, Duxford, Cambridge. The machine is a biplane characterised by a large top plane and a small bottom plane.



The Avro 504K

Various Rotary Engines

Originally designed in 1912, and the first experimental machine making its appearance in 1913, the Avro 504 is the oldest type of British machine still in regular use. It has, since its first inception, undergone a number of minor modifications, but is still fundamentally the same as the 1913 prototype. It is being used extensively for training purposes, and is also a favourite with "joy-riding" firms. In the latter capacity the Avro 504 has probably given more people their *baptême de l'air* than any other machine in the world. Characteristic features are high aspect wings, very elongated fuselage, and a central skid chassis.

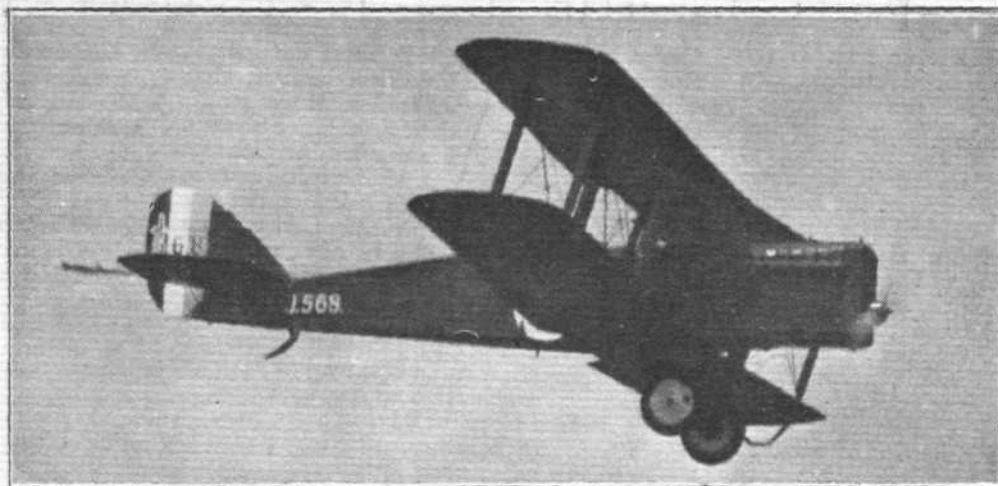


The Bristol Fighter

Rolls-Royce "Falcon"

Designed by Capt. F. S. Barnwell and built in large quantities during the war, the Bristol Fighter, is another old-timer. It is a two-seater fighter, and may perhaps best be recognised by the rather peculiar shape of its tail. In modern times the type is used exclusively for Army co-operation, and the following Army Co-operation Squadrons are equipped with it: No. 2, Manston; No. 4, Farnborough; No. 5, Risalpur, India; No. 6, Mosul; No. 13, Andover; No. 16, Old Sarum; No. 20, Peshawar, India; No. 24 (Communications) Squadron, Kenley; No. 28, Quetta, India; No. 31, Ambala, India; and No. 208, Moascar, Ismailia.





De Havilland D.H.9A

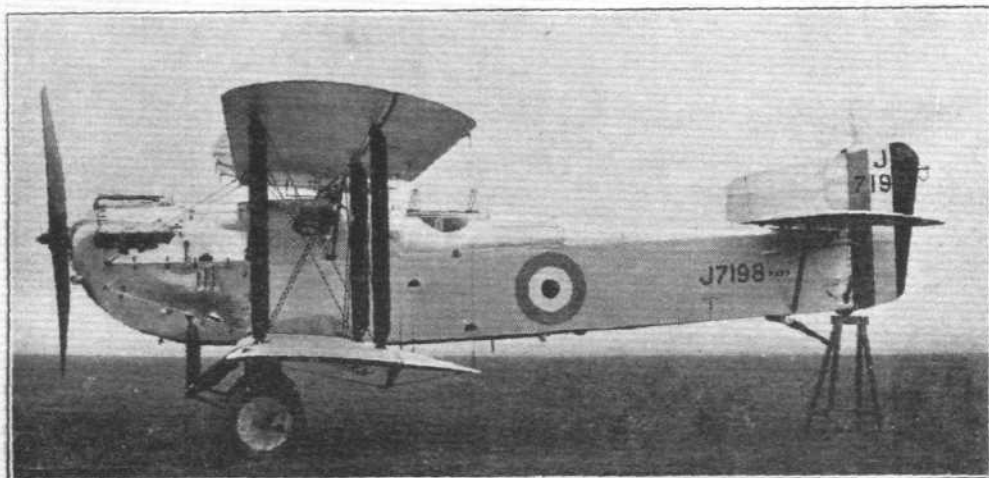
Liberty Engine

If the Avro 504K and the Bristol Fighter can be said to be "ever-green," much the same applies to the D.H.9A, which is a war type, but which is still used fairly extensively in the R.A.F. The D.H.9A is used by squadrons No. 8 (Bombing), Hinaidi; 14 (Army Co-operation), Amman and Ramleh; 15 (Bombing), Martlesham Heath; 24 (Communication), Kenley; 27 (Bombing), Risalpur; 30 (Bombing), Hinaidi; 39 (Bombing), Spittlegate; 47 x (Bombing), Helwan; 60 (Bombing), Kohat; 84 (Bombing), Shaibah; 207 (Bombing), Eastchurch; and 600, City of London Bombing Squadron (Auxiliary Air Force), and 602, the City of Glasgow Bombing (A.A.F.).

The Fairey "Fawn"

Napier "Lion"

This is a two-seater long-distance day bomber, with a somewhat unusual oleo undercarriage, which is quite distinctive and renders the machine fairly easily recognised. In general the "Fawn" bears a strong "family resemblance" to the Fairey III.D machines which have just completed the flight from Cairo to the Cape and back although it differs from the older type in most respects. The following squadrons are equipped with the Fairey "Fawn": No. 11 (Bombing) Squadron, Netheravon; No. 12 (Bombing) Squadron, Andover; No. 100 (Bombing) Squadron, Spittlegate; all three of the "Wessex" Bombing Area.



The Fairey "Flycatcher"

Armstrong Siddeley "Jaguar" or Bristol "Jupiter"

Although generally classed as a single-seater fighter, the Fairey "Flycatcher" has many rôles. Its peculiar "cocked-up" fuselage is a result of the need for a large ground angle, used in conjunction with the Fairey patented flap gear, which enables the machine to land very slowly even when heavily loaded. Among the functions of the "Flycatcher" is that of a ship's 'plane, for use in naval co-operation, and it should be mentioned that the machine is also produced as a twin-float seaplane, in which case it is amphibian, having landing wheels projecting through the centre of the floats.

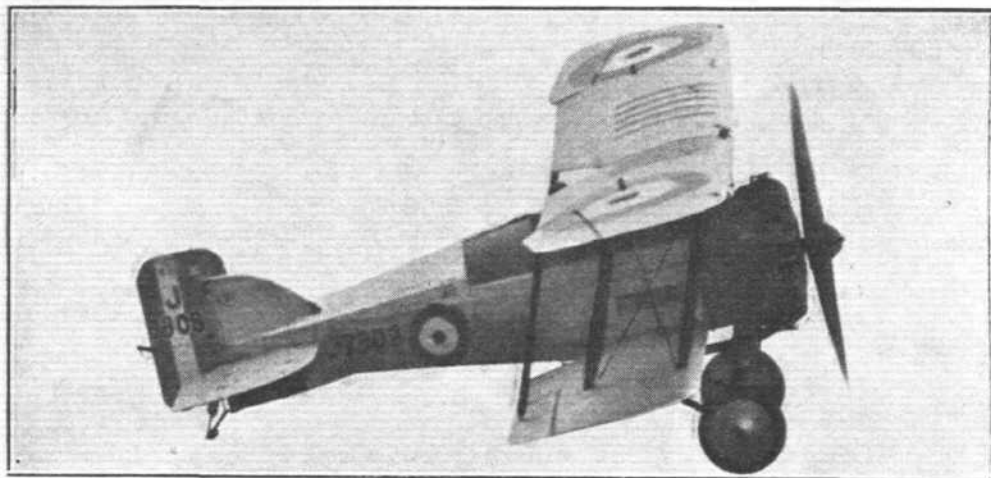


The Gloster "Grebe"

Armstrong Siddeley "Jaguar"

For a long period one of the most popular single-seater fighters in the Royal Air Force, the Gloster "Grebe," is now being gradually superseded by a later type, the Gloster "Gamecock," but it is still being used in large numbers. It has a fairly thick section, high-lift top plane and a thin-section, high-speed lower plane. It is claimed that at top speed the upper wing carries nearly the whole load, so that monoplane efficiency is approached. The "Grebe" is used by the following squadrons: No. 19 (Fighter), Duxford; No. 25 (Fighter), Hawkinge; No. 29 (Fighter), Duxford; No. 32 (Fighter), Kenley; and No. 56 (Fighter), Biggin Hill.]





The Gloster "Gamecock"

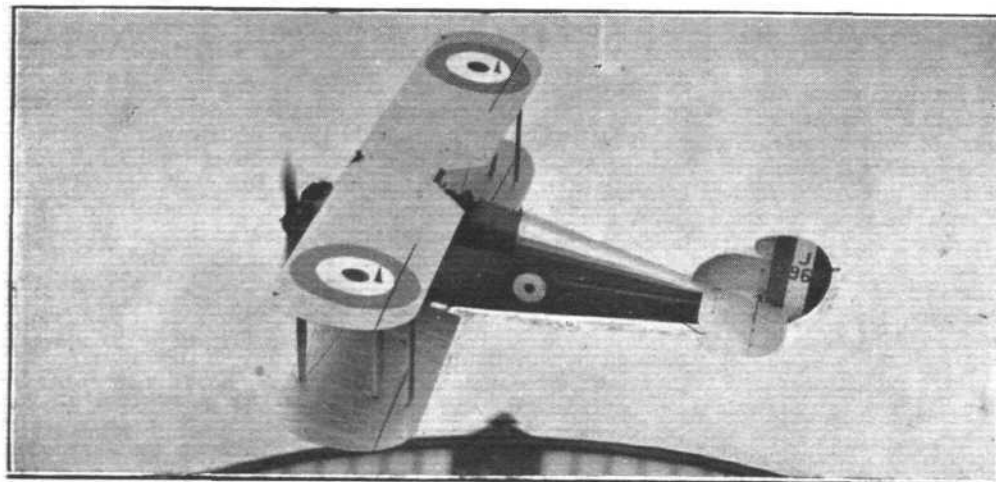
Bristol "Jupiter"

Although not unlike the Gloster "Grebe" in general appearance, the "Gamecock" incorporates a number of special features, improvements, etc., to which, however, no reference may be made here. Apart from the fact that a Bristol "Jupiter" of the latest type, similar to that which flew 25,000 miles between Croydon and Bristol, is fitted, the "Gamecock" is remarkable for the convenient manner in which its various pieces of equipment are arranged, so as to be easily accessible, a feature of the very greatest importance in service work. At present the only squadron equipped with "Gamecocks" is No. 23 (Fighter) squadron, Henlow.

The Hawker "Woodcock"

Bristol "Jupiter"

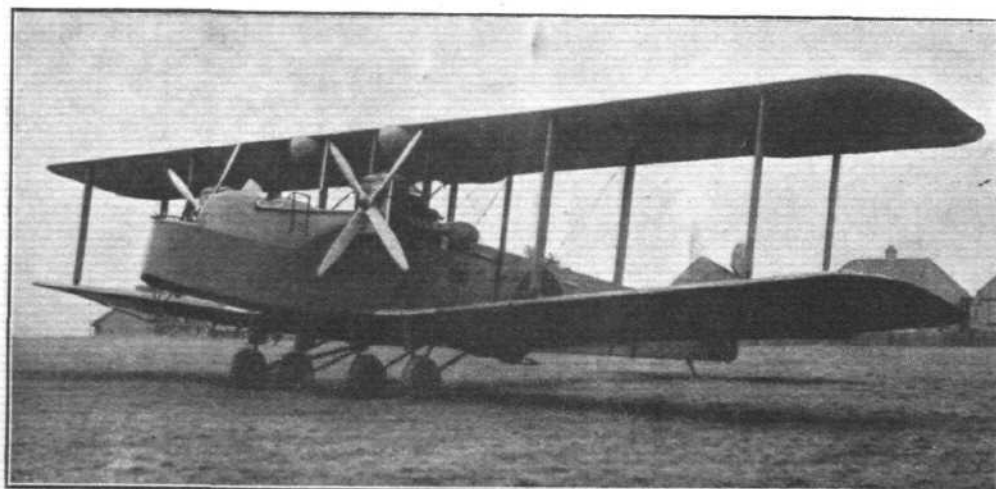
Designed and built by the H. G. Hawker Engineering Co., which may be said to be carrying on the traditions of the late Sopwith Aviation Co., the "Woodcock" single-seater fighter may justly be regarded as the scion of a long family, commencing with the little Sopwith "Tabloid." The "Woodcock" is of normal straightforward design, but, as in so many other cases, appearances are deceptive, and the machine possesses features which a casual examination might fail to reveal. The Hawker "Woodcock" forms the standard equipment of No. 3 (Fighter) squadron, Upavon, and No. 17 (Fighter) squadron, Hawkinge.



Handley Page "Hyderabad"

Two Napier "Lions"

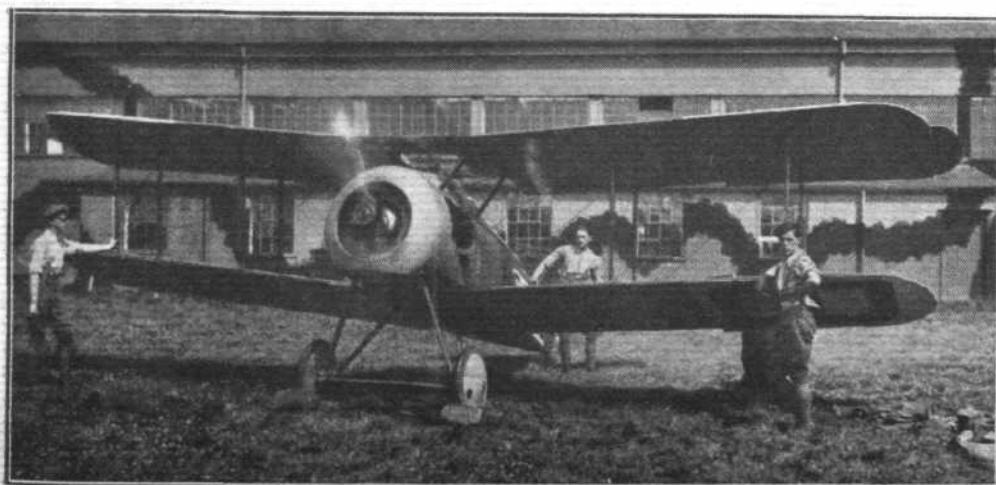
The Handley Page "Hyderabad" may be said to be the development, for service purposes, of the famous Handley Page twin-engined commercial aeroplanes. The service type is designated officially as a "four-seater medium range bomber," and those familiar with Handley Page commercial aeroplanes will note that certain alterations have been made in the fuselage, the nose of which has been re-designed so as to admit of a gunner in front, with the pilot in a raised position immediately aft of the front gunner's cockpit. The only squadron equipped with "Hyderabad" is No. 99 (Bombing) Squadron, Bircham Newton.



The Sopwith "Snipe"

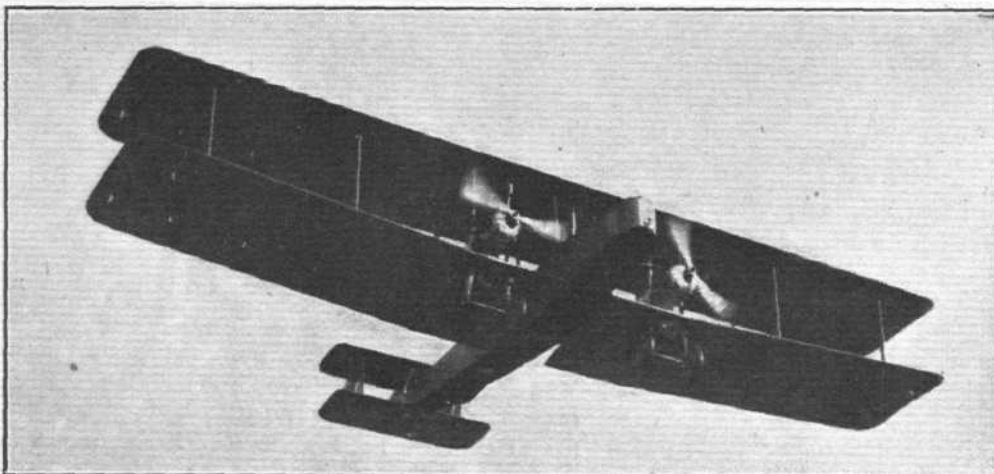
B.R. 2 Rotary

Of the types of aircraft in use at the end of the war, quite a number have been retained. In many cases this has necessitated "reconditioning" the machines which had been kept in stores for several years, and among the types that have been reconditioned, as well as built *de novo*, is the Sopwith "Snipe," a single-seater fighter with rotary engine. The introduction of more powerful radial air-cooled engines has rendered the rotary obsolete. Thus the "Snipe" is now about to disappear altogether. The only squadrons still equipped with it are: No. 1 (Fighter) Squadron, Kenley, and No. 43 (Fighter) Squadron, Henlow.



Vickers "Virginia"
Two Napier "Lions"

It is now six years since the late Sir John Alcock and Sir Arthur Whitten Brown flew across the Atlantic in a Vickers "Vimy" with two Rolls-Royce "Eagle" engines, a type similar to that on which the late Sir Ross Smith, and his brother, Sir Keith Smith, flew from London to Australia. The "Vimy" may be said to have been the prototype of the Vickers "Virginia" four-seater long-distance bomber which will take part in the Display. The "Virginia" is, however, fitted with more powerful engines (Napier "Lions"). The "Virginia" forms the standard equipment of Bombing Squadrons No. 7, Bircham Newton, 9 (Manston), and 58 (Worthy Down).



AIRCRAFT TYPES TO BE SEEN IN THE "FLY-PAST"

COMPARED with the R.A.F. Displays of previous years, there will be a large number of really new types to be seen in public for the first time at Hendon on July 3. Moreover, some of the types that will take part in the "Fly-past" will represent radical departures from normal practice in aircraft design. This applies more particularly to the Cierva "Autogiro" and the Hill "Pterodactyl," and it is a somewhat curious coincidence that one of the features of both these types of aircraft is that they will not "stall." For the benefit of the non-technical, it may be explained that "stalling" means flying at an angle to the horizontal greater than the angle which gives maximum lift on the wings or sustaining surfaces. When a normal machine "stalls," it can only regain its proper flying attitude by a dive at high speed, and if the "stall" occurs close to the ground there is risk of striking the ground at high speed. The majority of accidents are due to this cause, and consequently, great interest attaches to the two machines in which this inherent defect is remedied

in two quite distinct ways. Their very unusual appearance will probably call forth much comment.

Apart from the two unusual types of aircraft which will be seen, this year's "Fly-past" should be of special interest on account of the fact that several of the very latest types of "normal" aeroplanes will take part. Not only so, but four of these will be of the single-seater fighter class, with powerful engines and very high speed. These are the Avro "Avenger," the Fairey "Firefly," the Gloster "Gorcock," and the Hawker "Hornbill." Never before have four such machines been seen at a R.A.F. Display, and a race between the four would be worth watching. This, however, is not likely to be allowed. Of the four the "Firefly" has the lowest horsepower, but its clean lines help to make up for this, although both the "Avenger" and the "Gorcock" are carefully streamlined. The "Hornbill" is the most powerful of the four, with its 650 h.p. "Condor" engine, but to carry the weight of the heavier engine its wings are of larger area.

Armstrong Whitworth
"Argosy"

Three Armstrong-Siddeley "Jaguars"

But for the fact that there is not a great deal of difference between a civilian passenger aeroplane and a service troop carrier, it would be somewhat curious to see, in what is a purely Service Display, a commercial aeroplane. Doubtless it is for that reason that the Armstrong Whitworth "Argosy" is one of the machines which will take part in the "Fly-past." As the "Argosy" is illustrated and described in some detail elsewhere in this issue, there is little need to do other here than to state that the machine, is the only three-engined aeroplane in the Display.



Armstrong Whitworth "Atlas"
Armstrong Siddeley "Jaguar"

From the previous section of this "guide" to the machines at Hendon it will have been clear that the machine at present used for "Army co-operation" is the good old Bristol Fighter. The time has, however, come when something rather better than a machine which, excellent though it was in the days of the war, can scarcely be regarded as quite modern. An inspection of the official programme will reveal the fact that among the "new and experimental aircraft" in the "Fly-past" are no less than four machines designated as intended for Army co-operation. The "Atlas" is the Armstrong Whitworth version of what such a machine should be.



The "Autogiro"

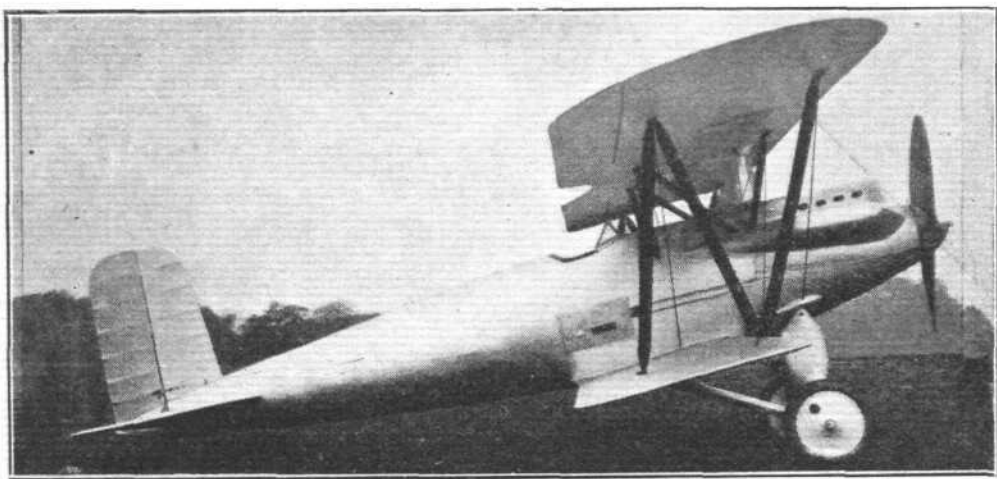
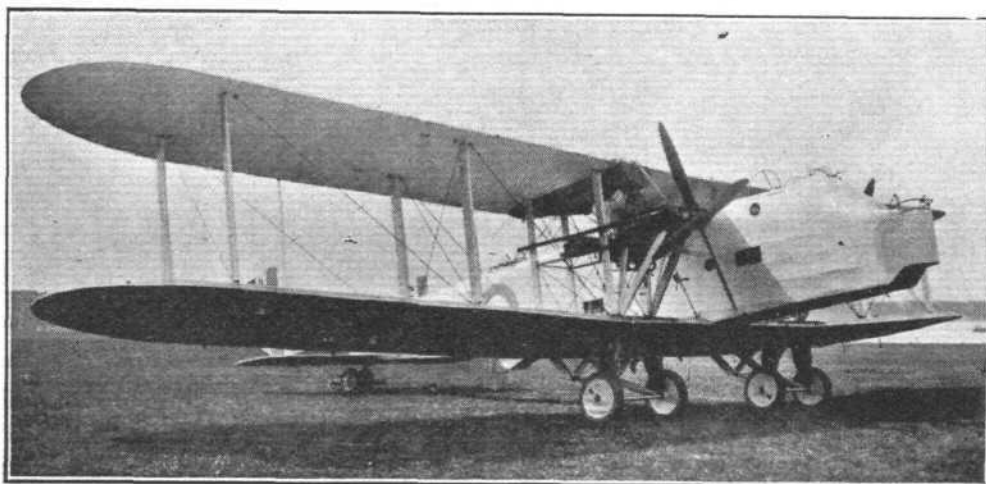
130 h.p. Clerget

The invention of a Spanish engineer, Senor de la Cierva, the "Autogiro," which will be seen at Hendon has been constructed in this country by A. V. Roe & Co., it being perhaps significant that Mr. A. V. Roe, one of the earliest pioneers of British aviation should pioneer a modern venture. The "Autogiro" has a rotating windmill in place of wings, and differs from the helicopter in that the lifting surfaces are not driven directly by the engine but by the air forces acting upon them. Propulsion is by an ordinary airscrew. At present the "windmill" is hand started but later mechanical starting will be fitted.

The Avro "Ava"

Two Rolls-Royce "Condors"

The most powerful machine to be seen at Hendon will be the new Avro "Ava," which is a twin-engined coastal defence torpedo aircraft fitted with two Rolls-Royce "Condor" engines of 670 h.p. each, so that the total power is 1,340 h.p. The machine is designed for very long range, and there are dual controls for two pilots sitting side by side. The usual gunner's cockpits are provided. The divided undercarriage allows of carrying a torpedo, but the machine has alternative arrangements for carrying bombs. Owing to the large span of the wings, these are made to fold back when the machine can be housed in an ordinary hangar.



The Avro "Avenger"

Napier "Lion" VIII

Reference has already been made to the fact that four very fast new single-seater fighters will take part in the "Fly-past." Of these, one of the most interesting is the Avro "Avenger" with direct-drive Napier engine. This machine, designed by Mr. Roy Chadwick, chief designer of A. V. Roe & Co., should be compared with the Avro "Ava" in order to appreciate how widely differing types a designer may be called upon to produce. The "Avenger" (the name appears to have some significance) has a *monocoque* fuselage, beautifully stream-lined into which the cylinder blocks of the engine are neatly faired.

The Blackburn "Sprat"

Rolls-Royce "Falcon"

The "Sprat," designed and built by the Blackburn Aeroplane and Motor Company of Leeds, is a training machine of relatively low power, and a feature of it is that it can be used either as a land aeroplane or as a twin-float seaplane, the two undercarriages being interchangeable. A particularly good view from both cockpits is obtained, as they are placed aft of the trailing edge of the top plane, a feature of value in all machines, but particularly in a training type, especially as the "Sprat" is also to be used for training in the landing on the deck of a ship, where a very small divergence from the correct spot may easily spell disaster.





The Bristol "Boarhound" *Bristol "Jupiter"*

It is always of interest to trace the individuality of aircraft designers, and in the four Army co-operation machines taking part in the "Fly Past" there is an opportunity to do so. In the Bristol "Boarhound" Captain F. S. Barnwell, chief designer of the Bristol Aeroplane Company, shows his interpretation of the specification for a machine in which the requirements of work in conjunction with the Army shall be met. The high "deck" of the machine is obviously dictated by a desire to get a good view for both pilot and gunner, and air resistance has been reduced by placing the pilot's guns in tunnels on the side of the fuselage.

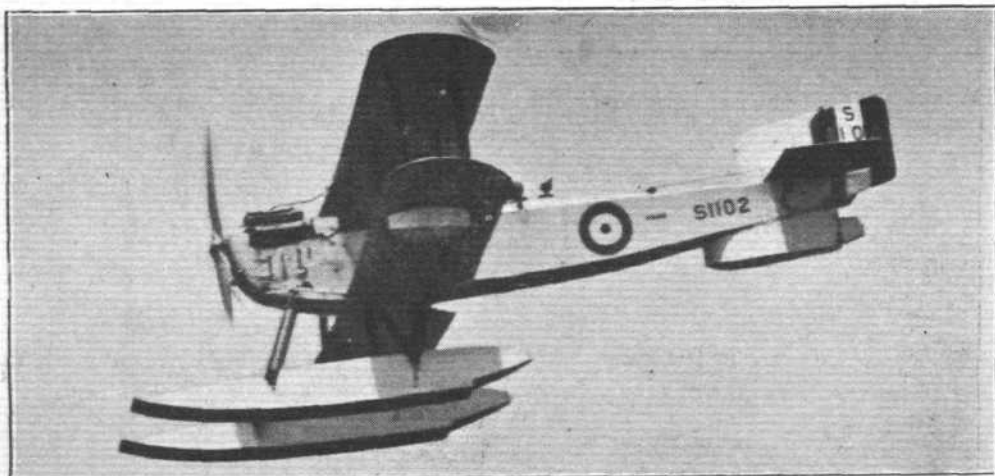


De Havilland "Hyena" *Armstrong Siddeley "Jaguar"*

Designed to the same specification as the other Army co-operation machines, the de Havilland "Hyena" retains its typical de Havilland lines, and especially does it resemble the famous D.H.9A, except for such rather drastic changes as the substitution of a radial air-cooled engine for the water-cooled "Liberty" of the 9A, and the fitting of a lower plane of considerably smaller chord than the top. The cowling of the "Jaguar" engine has been carried out with considerable care, and the undercarriage is of more modern design than that of the 9A, being of the type in which rubber blocks are used working in compression.

The Fairey IID *Napier "Lion"*

Not originally intended to be included in the Display programme, it was a happy idea to incorporate in the "Fly Past" the four Fairey IID machines in which Wing-Commander Pulford and his companions flew from Cairo to Cape Town and back, and thence on to England, landing at Lee-on-Solent on June 21. The machine shown is fitted with floats, as used on the Egypt-England stage, but they have since been provided with land undercarriages like those used in Africa, and will, of course, "wear" these at Hendon. It is also of interest to mention that the engines will be the actual Napier "Lions" used throughout the 14,000 miles' flight.



The Fairey "Firefly" *Fairey "Felix"*

With its fuselage of streamline form and small cross-sectional area, its wing radiators and its very simple undercarriage, the Fairey "Firefly" is a single-seater fighter of quite exceptionally "clean" lines, and will be sure to create an excellent impression at Hendon where, like the other three machines of this class, it will be seen in public for the first time. The small overall width of the engine and the absence of a nose radiator enables the front portion of the fuselage to be practically free of "bulges," thus saving head resistance, while the "lines" of the nose are carried to a point by a small spinner over the boss of the Fairey-Reed Duralumin propeller.



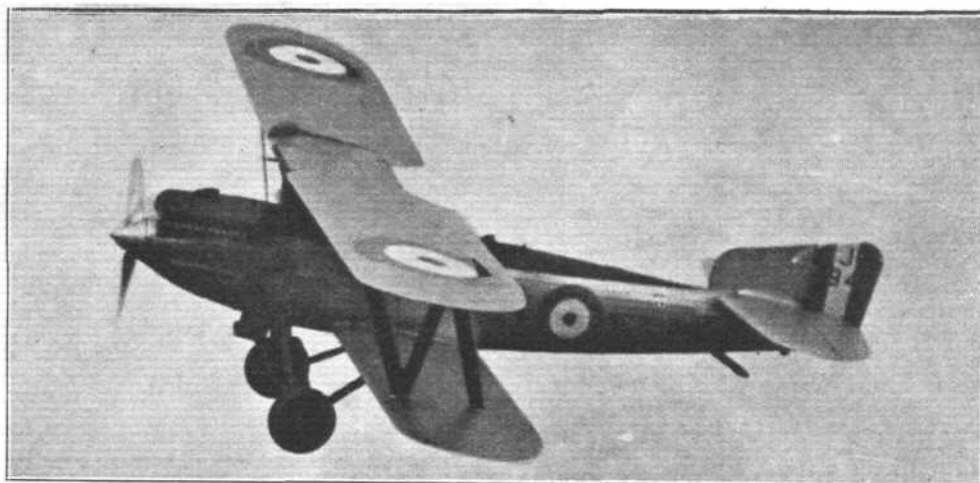
JULY 1, 1926

FLIGHT
THE LONDON AIRCRAFT

The Fairey "Fox"

Fairey "Felix"

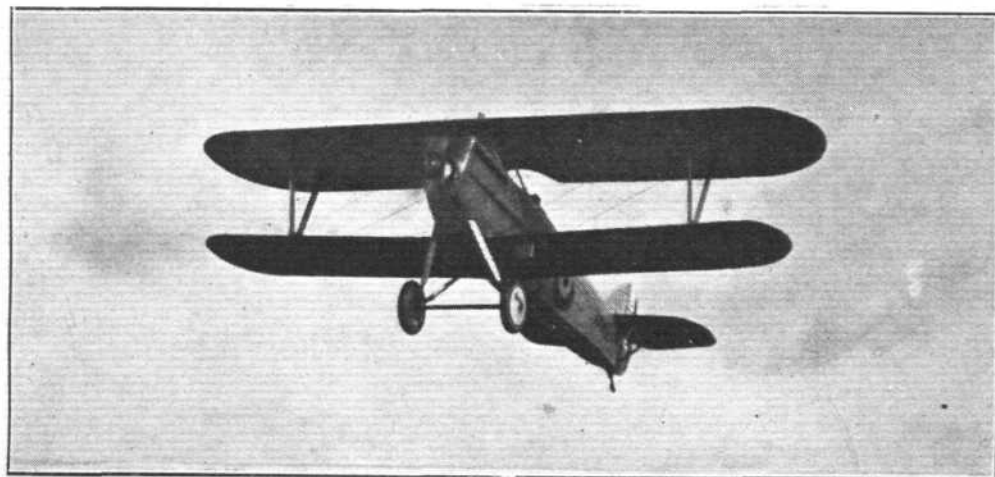
Fitted with the same engine as the "Firefly," the "Fox" two-seater day bomber was produced before the "Firefly," and has now gone into production for the Royal Air Force. At the moment no information has been allowed to be published concerning which squadron is to be the first to be equipped with a machine that is generally believed to be the fastest two-seater in this country, if not in the world. The suppression of all excrescences which might add head resistance has resulted in an extraordinarily smooth fuselage, and it will be noted that there is no external Scarff gun-ring such as we have become familiar with.



The Gloster "Gorcock"

Napier "Lion" VIII

An interesting comparison may be made between the Gloster "Gorcock" and the Avro "Avenger," both being single-seater fighters and both being fitted with the Napier direct-drive engine. As is, of course, well known, the "Gorcock" was designed by Mr. H. P. Folland, chief designer to the Gloucestershire Aircraft Company, who designed the Gloster III that took part, piloted by Mr. Hinkler, in the Schneider Cup seaplane race at Baltimore last year. Like the "Firefly," the "Gorcock" has wing radiators of the type lying flush against the surface of the upper wing, while the "Avenger" has Lamblin radiators.



The Hawker "Hornbill"

Rolls-Royce "Condor"

Although a single-seater fighter, the "Hornbill," designed by Mr. Camm, chief designer of the H. G. Hawker Engineering Co., is a somewhat different type from the other three, having a much more powerful, but also larger and heavier engine, the Rolls-Royce "Condor," of 670 h.p. The extra size of the engine, and the greater quantity of fuel to be carried, mean a greater power plant and fuel weight, and consequently larger wing area if the same stalling speed is to be retained. In spite of this, Mr. Camm has been very successful in producing a clean machine without sacrifice of speed.



The Hawker "Horsley"

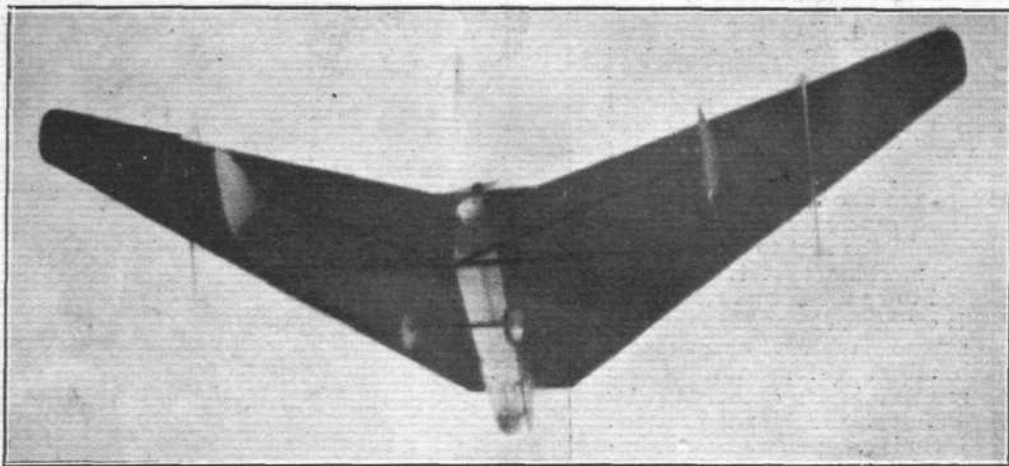
Rolls-Royce "Condor"

Although a day bomber like the Fairey "Fox," the Hawker "Horsley," is a vastly different type of machine. To begin with, it has a 700 h.p. Rolls-Royce "Condor" instead of the 430 h.p. of the "Felix," and secondly it has the usual excrescences upon which, apparently, the Air Ministry insists, or insisted until Mr. Fairey produced the "Fox." Also it is a very much larger machine than the "Fox." For all that, the "Horsley" has proved itself a very fine machine, and the internal arrangement of all the paraphernalia is something to be wondered at. The "Horsley" has now gone into quantity production.

The Hill "Pterodactyl"

Bristol "Cherub"

The tail-less machine is no novelty, Colonel Dunne having produced aeroplanes of this type in the very earliest days of flying, but in the "Pterodactyl" Capt. G. T. R. Hill has incorporated, in addition to the "tailless" feature, the modern knowledge of aerodynamics, with the result that his machine is freed from the bugbear of aviation, "stalling," as well as possessing other important features. The tips of the back-swept wings are pivoted and act as elevators and ailerons, while separate rudders project below each wing. The tailless machine appears to promise the possibility of a return to the "pusher" (i.e., engine-behind) type without loss of efficiency.



The Vickers "Vendace"

Rolls-Royce "Falcon"

Designed to the same specification as the Blackburn "Sprat," the Vickers "Vendace" is a two-seater training machine capable of being used either as a seaplane or as a land aeroplane. It was designed by Mr. Rex Pierson, chief designer to Vickers, Limited, among whose famous machines is numbered the "Vimy" on which Sir John Alcock flew across the Atlantic, in 1919. Being intended for training purposes the "Vendace" has a fairly large wing area, with the result that the stalling speed is extremely low. The wing strutting arrangement is somewhat unusual, there being but one strut (on the front spar) in the inner bay.

The Vickers "Vespa"

Bristol "Jupiter"

Reference has already been made to three of the four new Army co-operation machines taking part in the "Fly-past." The fourth is the "Vespa" designed by Mr. Rex Pierson and built by Vickers, Limited. The ability to fly very slowly is a desirable feature in an Army co-operation machine, and it will be seen that the "Vespa" has a large wing area. A somewhat unusual feature of the design is that the fuselage does not rest on the bottom plane, as is usually the case, a gap being left between the fuselage and the lower wing. The fuselage is of relatively small cross-sectional area, and the biplane wings are of unequal span and chord.



AIR MINISTRY NOTICES

Watchet Anti-Aircraft Artillery Range

It is notified that:—

1. Anti-aircraft artillery practice which takes place at Watchet forms a danger to aircraft when flying above the area described below.

2. Pilots should therefore avoid this area, as no liability for accidents arising to aircraft as a result of such artillery practice will be admitted.

3. No special warning signals for aircraft will be displayed, but the usual flag signals, etc., as indicated, will be employed whenever firing is taking place.

4.—Details.

Description and Position.—An area comprising an irregular segment of a circle enclosed, on the seaward side, between the radii, approximately 6 miles in length, bearing 289° True and 70° True respectively, and having as their centre a point approximately 1½ miles E. of Watchet, Somersetshire. The centre of this area is situated 8 miles E.N.E. of Minehead, in latitude 51° 13' N., longitude 3° 18' W.

Programme of Firing.—From June 20 daily, until the end of September, 1926.

Warning Signals.—Red flags by day, and groups of three red lights, arranged in a vertical line, by night.

Air Pilot.—A reference to this Notice should be inserted, temporarily, in the Air Pilot, para. 71 (p. 22).

(No. 28 of 1926.)

Flight Over Royal Air Force Aerodromes

It is notified:

1. Notice to Airmen No. 22 of 1926 is cancelled and the following substituted:—

2. The General Rules for Air Traffic comprised in Section III of Annex D of the International Air Convention, and reproduced in Section III of Schedule IV to the Air Navigation (Consolidation) Order, 1923, are observed by all Royal Air Force aircraft, except in the following circumstances:—

- (a) During air fighting practice.
- (b) During formation flying, training or practice.
- (c) When aircraft of experimental units are engaged in research.

3. Civil aircraft, therefore, should as far as possible avoid flying over or in the vicinity of Royal Air Force aerodromes and should in all cases give way to formations of aircraft. I do so they should observe the same rules as would apply between a flying machine and an airship.

4. Civil aircraft en route to or from the Continent should, in particular, avoid flying over Biggin Hill Aerodrome. Aircraft leaving or approaching Croydon should pass over or near Tatsfield Lighthouse.

Air Pilot.—An amendment to the Air Pilot, para. 74A, will be published in due course.

(No. 29 of 1926.)

ROYAL AIR FORCE MEMORIAL FUND

THE third meeting of the year of the executive committee of the above fund was held at the offices of the fund, at Iddesleigh House, on June 9. Lord Hugh Cecil, P.C., M.P., was in the chair, and there was a large attendance of members.

The committee voted a sum of money for current repairs at Vanbrugh Castle School, Blackheath, and also voted an annual sum of £100 towards the upkeep of the school as regards repairs.

Two cases of application for benefit arising out of the Salting Benefaction, one being a renewal, and for the education of the children of deceased officers, were considered and approved.

The Committee were informed that the Grants Sub-Committee at their fortnightly meetings, between the date April 21 and the present time, had dealt with 50 cases, and that in the same period the secretary had dealt with 57 cases of appeals for assistance.

The Committee, at the request of the Air Council, are undertaking the custody and administration of sums of money accruing from the effects of deceased officers and airmen, and which sums are unclaimed at the expiration of six years from the death of an officer or airman. The money to be distributed under regulations laid down by the Air

Council to widows and dependents of deceased officers and airmen, as may be found necessary.

It was announced to the Committee that a panel, which has been erected in the chapel of the Royal Military College, Sandhurst, in memory of Gentlemen Cadets who served with the Royal Flying Corps or Royal Air Force during the Great War, has been completed.

The attention of members of the committee was specially drawn to the R.A.F. Display, which will be held at Hendon, on Saturday, July 3, the proceeds of which are to be devoted to the purposes of the fund by the kindness of the Air Council. It is hoped that Their Majesties, the King and Queen, will attend the display.

The next meeting of the Executive Committee, as already fixed, will take place at the offices of the fund on Wednesday, July 28 next.

The usual fortnightly meeting of the Grants Sub-Committee of the above Fund was held at Iddesleigh House on June 17.

Lieut.-Comdr. H. E. Perrin was in the chair, and the other members of the committee present were Mrs. L. M. K. Pratt-Barlow, O.B.E., Mr. W. S. Field. The Committee considered in all 18 cases, and made grants to the amount of £69 9s.

The next meeting was fixed for July 1, at 2.30 p.m.

ROYAL AERONAUTICAL SOCIETY



New Chairman.—At a meeting of the Council of the Royal Aeronautical Society, Colonel the Master of Sempill was elected Chairman of the Society for the year, October, 1926, to September, 1927.

R.38 Memorial Prize.—The R.38 Memorial Prize, offered annually for the best paper received by the Society on some subject of a technical nature in the science of aeronautics, has been awarded this year

to Mr. R. V. Southwell, F.R.S., A.F.R.Ae.S., for his paper, entitled "On the Calculation of Stresses in the Hulls of Rigid Airships." The paper will be published in the Journal of the Royal Aeronautical Society.

Prizes.—The regulations for the Edward Busk Memorial Prize of 20 guineas, and for the R.38 Memorial Prize of

25 guineas may be had on application to the Secretary. Entries for the former must be received by September 30, and for the latter by December 31.

Associate Fellowship Examination.—Attention is again drawn to the Society's examination for Associate Fellowship. This examination will be held, provided sufficient entries are received, on September 20 (Part I), and September 21 (Part II). Entries must be received by August 23.

The Society's Aims.—A booklet has been published giving briefly the work and aims of the Society. From it anyone wishing to join the Society in any grade may obtain the particulars he wishes with regard to the qualifications necessary, rates of subscription, &c. The booklet will be sent post free to anyone applying for it.

J. LAURENCE PRITCHARD,
Hon. Secretary.

No. 20 Squadron Reunion Dinner

Will be held on Saturday, July 3rd, at 8 o'clock at Gatti's Restaurant in the Strand. Tickets, 12s. 6d. Chairman, Major W. H. C. Mansfield, D.S.O.

Any past or present member of No. 20 desirous of attending should communicate before July 2 with Capt. J. A. Hone, c/o Messrs. Kitching & Tabraham, 10 Austin Friars, E.C.2, Phone, London Wall 5005.

U.S. AIR MAIL SERVICES

Offshoots of the Transcontinental Services

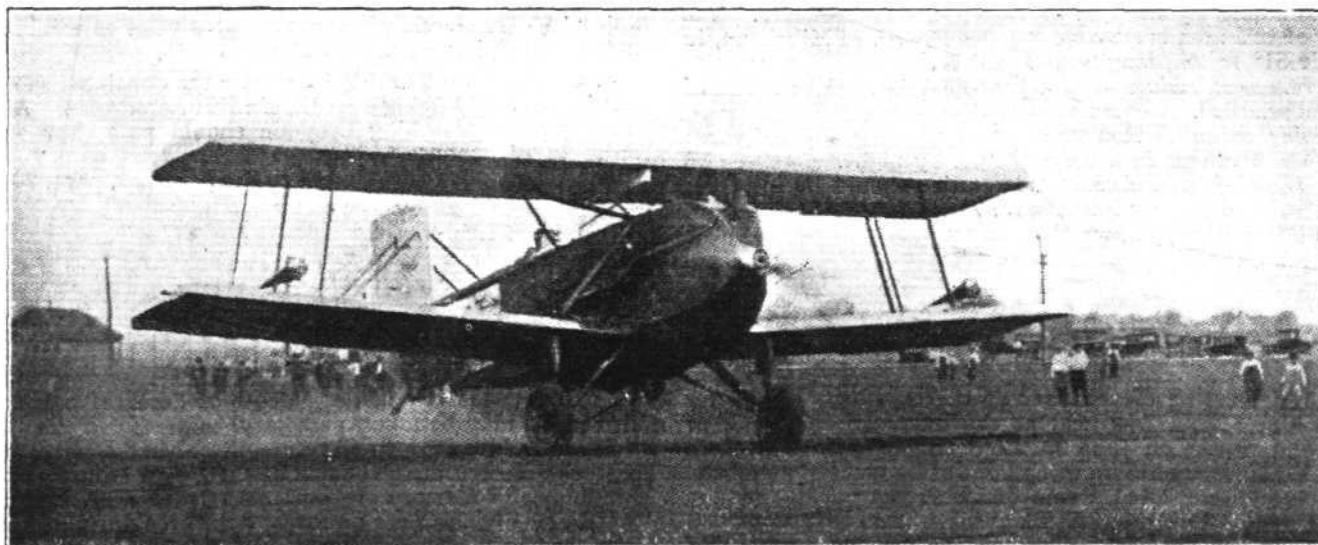
Note.—In our issue for June 10 we gave a list of the ten Contract Air Mail Services which have been entered into by the U.S. Post Office Department, consequent upon the decision to extend the U.S. Air Mail Services beyond that of the original Transcontinental route, which has been in successful operation for some years. This week we give brief particulars of some of these new C.A.M. Services, and in following issues we will continue our reports on the other routes.

C.A.M. No. 3.—Chicago-Dallas (1,000 miles)

The contract for the 1,000-mile air mail service between Chicago, Ill., and Dallas, Tex., was obtained by the National

service with both the eastern and western coast, by connection with New York and San Francisco through the Transcontinental route.

The C.A.M.3 route includes the following cities:—Chicago, Moline, St. Joseph, Kansas City, Wichita, Oklahoma City, Fort Worth, and Dallas. Through the close connecting-up of the N.A.T. and the Post Office overnight service between Chicago and New York, this new service forms, to all intents and purposes, part and parcel of the general service. The N.A.T. machines leave Chicago upon the arrival of the overnight mail 'planes from New York, and the north-bound N.A.T. 'planes leave Dallas on the arrival of the mail trains from the South, and reach Chicago in time to connect with



U.S. AIR MAIL SERVICE. C.A.M. NO. 3: The Curtiss "Carrier Pigeon" mail 'plane, the type used on this route, leaving Chicago on May 12, for the first trip to Dallas.

Air Transport, Inc., of Chicago. The president of this company is Mr. Howard E. Coffin, a name well known in motoring and aviation circles. It has for its chairman Mr. C. M. Keys, also an active member of the aviation industry, having been president of the Curtiss Aeroplane & Motor Co. for some years past, whilst Mr. Chas. L. Lawrence, whose name is well known in connection with the Lawrence and Wright aero engines, is a vice-president.

It is considered that this mail service, which commenced operations on May 12, will be extensively patronised, since it connects some of the most important business and industrial districts of the Middle West States. Furthermore, it also provides for districts in the South a rapid mail and express

the eastbound Transcontinental machines. It is probable that in the future the west-bound Transcontinental mail 'plane (which leaves Chicago about 6 p.m.) will pick up the N.A.T. mail from the south at Moline, which would necessitate but a slight deviation from the original Transcontinental route.

The whole of the route has been very efficiently organised and laid out. Provision is made at the southern end of the route for night illumination—later, it is probable that the whole of the route will be equipped for night flying.

The machines used by the N.A.T. Company are Curtiss "Carrier Pigeon" mail 'planes, with Liberty engines. At present there are ten of these machines, eight of which have



U.S. AIR MAIL SERVICES. C.A.M. NO. 4: One of six Douglas M.2 mail 'planes employed by the Western Air Express, Inc., on the Salt Lake City to Los Angeles route.

been named after each of the cities served on the route, the remaining two machines having been named "San Antonio" and "Houston," representing two big business centres beyond the southern terminal.

The opening of this route was successfully carried out on May 12, when both northbound and southbound trips were accomplished well within scheduled times. The mail carried on these first flights was also exceptionally heavy—about 1,900 lbs. of mail was handled at the Chicago terminal alone.

The schedule of No. 3 route is as follows: Southbound—Chicago, dep. 5.45 a.m.; Moline, dep. 7.35 a.m.; St. Joseph, dep. 10.35 a.m.; Kansas City, dep. 11.18 a.m.; Wichita, dep. 1.18 p.m.; Oklahoma City, dep. 3.5 p.m.; Fort Worth, dep. 5.15 p.m.; Dallas, arr. 5.35 p.m. Northbound—Dallas, dep. 7.30 a.m.; Fort Worth, dep. 8 a.m.; Oklahoma City, dep. 10.10 a.m.; Wichita, dep. 11.57 a.m.; Kansas City, dep. 1.57 p.m.; St. Joseph, dep. 2.40 p.m.; Moline, dep. 5.40 p.m.; Chicago, arr. 7.20 p.m.

C.A.M. No. 4.—Salt Lake City-Los Angeles (600 Miles)

The Western Air Express, Inc.—of which Mr. H. M. Hanshue is president—which obtained the contract for the air mail service between Salt Lake City and Los Angeles commenced operations on April 17. This air mail service will cut more than 40 hours from the present fastest mail schedule between the populous and rich California region and Chicago. It will bring Los Angeles and adjacent communities within 30 hours by air mail of New York City. Southern California is one of the most important states in America, and is the heart of the far western industry, the home of great enterprises which need quick and constant contact with eastern markets,

and having tremendous potentialities for the future. Hence this new air mail service will undoubtedly be of enormous value to its business, and has, in fact, received considerable support from the business people of California.

The route of this service follows closely the beaten path established early in the international contest for the possession of the western third of the continent, but from the air point of view it is essentially a pioneer route. Therefore, prior to the inauguration of the service, Western Air Express, Inc., sent out a mapping expedition to organise the most suitable route, and as a result 85 emergency landing fields were marked along the 660-mile route, which passes, eastward, through Cajon Pass, across the southern edge of Death Valley, the desert barrens of eastern California, southern Nevada and western Utah, to the valley of the Great Salt Lake. An alternative route through the "Mormon Mountains"—the only bad stretch on the entire line—was also laid out.

The service is a daily one, in each direction, connection being made with the Transcontinental service at Salt Lake City. A stop is made at Las Vegas, Nev., where southern Nevada mail is loaded and discharged, and advantage is taken of this stop for refueling, thereby reducing the fuel load with a corresponding increase in mail load available.

For equipment the company has a fleet of six Douglas type M.2 mail planes, each of which has a cargo capacity of 1,000 lbs. One machine takes off from either terminal daily, flying right through to the other end. On the following day these machines return to their home port, where they "rest" for two days, the other machines completing the round.

Provision is made for wireless communication at Los Angeles, Las Vegas, and Salt Lake City.

R.A.F. CHAMPIONSHIPS

THE Royal Air Force Athletic Championships were concluded at Uxbridge on Saturday. The results were:—

440 Yards Relay (Juniors).—Farnborough, 1; Northolt, 2; Digby, 3. Won by a foot. Time, 47 secs.

440 Yards Open Relay.—Uxbridge, 1; Cranwell (holders), 2; Henlow, 3. Won by 2 ft. Time, 46 $\frac{3}{4}$ secs.

Tug-of-War (Junior).—Gosport beat Digby by two pulls to none.

Mile Team Race (Junior).—Calshot, 1; Upavon, 2; Digby, 3.

Placings.—L. A. C. Tym (Martlesham Heath), 1; A. C. Bluck (Calshot), 2; Corporal Clark (Upavon), 3. Time, 4 mins. 46 secs.

Mile Team Race (Open).—Uxbridge, 1; Cranwell, 2; Halton, 3.

Placings.—A. C. Turner (Uxbridge), 1; L. A. C. Goodall (Uxbridge), 2; L. A. C. Hester (Uxbridge), 3. Time, 4 mins. 36 $\frac{3}{4}$ secs.

Tug-of-War (Open).—Cranwell beat Uxbridge by two pulls to none.

Putting the Weight (Individual).—W.-Commander Tattinson (Andover), 36 ft. 1 in.; Corporal Eyles (Ruislip), 2; S.-M. Wilson (Digby), 3.

Putting the Weight (Open).—Senior.—Henlow, 92 ft. 4 $\frac{1}{2}$ ins., 1; Cranwell, 2; Halton, 3. Junior.—Andover, 1; Digby, 2; Bircham Newton, 3.

Long Jump (Open).—Senior.—Halton, 58 ft. 11 $\frac{1}{4}$ in., 1;

Cranwell, 2; Uxbridge, 3. Junior.—Upavon, 40 ft. 11 ins., 1; Martlesham H., 2; Sealand, 3.

Placings.—A. C. Grainger (Martlesham H.), 21 ft. 9 $\frac{1}{2}$ ins., 1; P.-O. Cannon (Manston), 2; A. C. Ward (Upavon), 3.

High Jump (Open) Senior.—Cranwell, 1; Netheravon, 2; Halton, 3. Junior.—Martlesham H., 1; Sealand, 2; Worthy Down and Andover tied for third.

Placings.—F. O. Nuttall (Kenley) (holder), 6 ft. $\frac{1}{4}$ in., 1; A. C. Pope (Cranwell), 2; A. C. Coley (Halton), 3.

Two Miles Open Relay Championship.—Uxbridge (L. A. C. Goodall, A. C. Jacobs, A. C. Hester, and A. C. Turner), 1; Cranwell, 2; Halton, 3. Won by 70 yards. Time, 8 mins. 29 $\frac{3}{4}$ secs. ("record").

Two Miles Junior Championship.—Gosport, 1; Calshot, 2; Upavon, 3. Won by one yard. Time, 8 mins. 38 $\frac{3}{4}$ secs.

360 Yards Hurdles Relay Race (Open).—Cranwell, 1; Halton, 2; Manston, 3. Time, 53 $\frac{3}{4}$ secs.

360 Yards Hurdles Relay Race (Juniors).—Hawkinge, 1; Digby, 2; Sealand, 3. Time, 51 $\frac{3}{4}$ secs.

One Mile Relay (Senior) Uxbridge, 1; Halton, 2; Cranwell, 3. Won by 20 yards. Time, 3 min. 38 $\frac{3}{4}$ sec.

One Mile Relay (Junior).—Digby, 1; Gosport, 2; Farnborough, 3. Won by 3 yards. Time, 3 mins. 41 secs.

King's Cup (Senior Stations) (strength of 500 and over).—Cranwell, 49 points, 1; Uxbridge, 41 points, 2; Halton, 35 points, 3.

Air Council Cup (Junior Stations).—Digby, 31 points, 1; Gosport, 24 points, 2.

Anti-Aircraft Training

THE annual camps of the Territorial Air Defence formations in co-operation with the Royal Air Force will be held at the Anti-Aircraft Practice Camp at Watchet in Somerset and at the Searchlight Training Camp at Manston in Thanet. The dates of commencement for the camps at Watchet are: 52nd A.A. Brigade, July 18; 51st A.A. Brigade, August 1; 53rd and 54th A.A. Brigades, August 22; and 55th Brigade, August 29. For those at Manston the dates of commencement are: Essex Searchlight Group, latter half of July; 27th Searchlight Battalion (London Electrical Engineers), July 25; Kent and Middlesex Group, August 8; and 26th Searchlight Battalion, August 22.

The Observer Corps of Special Constables in the counties of Suffolk, Essex, Kent, Sussex, Surrey, and Hants are to carry out an extended series of exercises with the Royal Air Force during July. The 1st Searchlight Battalion of the Regular Army from Blackdown will provide a lay-out of searchlights in Surrey and Kent, with headquarters at Biggin Hill, during July and August, for work with formations of the Royal Air Force.

Maj. Packman's Fatal Accident

It is with the utmost regret that we have to announce the death, through a flying accident on a "Gull" light monoplane, of Maj. Stanley Arthur Packman, the energetic and popular instructor at Newcastle Flying Club. It appears that Maj. Packman went up for a flight on the "Gull" on Thursday last, just after Mr. Heppell had landed after a short flight in the same machine. After he had been up a short time, Maj. Packman came in very low over the aerodrome, and in attempting to clear a small brick building flattened out. The machine lost flying speed and nose dived, but before Maj. Packman could regain control the nose of the "Gull" struck the ground. He was thrown from his seat and fell on his head, several yards away, causing a fracture of the base of the skull; both legs were also broken. It was stated that had he had another two yards height he could have got the "Gull" out of the dive. Maj. Packman, who leaves a widow and a seven-year-old daughter, was held in great esteem by all who came in contact with him, and he will be missed by very many friends at Newcastle and elsewhere.

LIGHT 'PLANE CLUB DOINGS

London Aeroplane Club

The total flying time for the week was 60 hours 35 minutes. The following Members had flying instruction:—Miss O'Brien, Col. Farfan, J. Eady, T. H. O. Richardson, Capt. Godfrey, H. R. Thomas, J. H. Saffery, J. C. Parkinson, G. W. Hall, B. B. Tucker, S. J. Bassett, B. Waugh, G. H. Craig, O. J. Marstrand, S. C. Richards, H. R. Presland, K. V. Wright, E. A. Cook, S. Nesbitt, P. O. Davison, H. Solomon, D. H. P. Esler, E. K. Blyth, E. E. Stammers, E. D. Moss, M. R. Berney, F. S. Adams, S. H. J. Garne, H. F. Wight, L. C. Sykes, Sir John Rhodes, Bart.

The following Members flew solo:—Squad-Leader M. E. A. Wright, E. E. Stammers, A. R. Ogston, N. J. Hulbert, A. G. D. Alderson, Major K. M. Beaumont, W. Hav, Mrs. Elliott Lynn, G. H. Craig, J. H. Saffery, E. D. Moss, A. Lees, S. O. Bradshaw, E. S. Brough, N. Jones, A. P. Hunt, G. Wallcousins, E. A. Cook, R. Malcolm, Sir John Rhodes, J. Barros, Capt. W. Roche Kelly, H. Kennedy.

The following Associate Members had joy rides:—Mrs. Bailey, Miss Salusbury, Miss Oldham, Miss Mullens, R. V. Crump, J. D. Lloyd, Miss Malcolm. A. P. Hunt successfully completed the flying tests for his Aviator's Certificate.

Royal Air Force Display.—Flying will be suspended on July 3, the day of the Royal Air Force Display at Hendon.

The Air Council has decided to allow Members of the London Aeroplane Club to purchase two tickets for the price of one to the 10s. enclosure. Not more than two tickets can be purchased by any one Member. Tickets may be obtained from the Pilot Instructors, Stag Lane Aerodrome, Edgware, or from 3, Clifford Street, London, W.1.

Purchase of D.H. "Moth."—The following donations have been received:—E. E. Stammers £5, Capt. J. T. Godfrey £2. Total to date £748 5s.

The King's Cup Air Race.—The race for the King's Cup will be held at the Hendon Aerodrome on Friday and Saturday, July 9 and 10, from 10 a.m. each day. The Royal Aero Club will give the Members of the London Aeroplane Club free admission on both days on presentation of their Membership Badges. Motor cars will be charged 2s. each. Refreshments will be supplied all day. The London Aeroplane Club will be represented in the King's Cup Air Race. The D.H. "Moth" will be entered by the Duke of Sutherland and will be flown by Capt. F. G. M. Sparks.

The Duke of Sutherland's Presentation "Moth."—On Saturday afternoon, July 10, the Duke of Sutherland, Vice-President of the Royal Aero Club, will present a D.H. "Moth" to the London Aeroplane Club. The presentation will take place at the Hendon Aerodrome on the occasion of the King's Cup Race, and it is hoped that all Members will make a special effort to be present.

The Midland Aero Club

Report for week ending June 26. The total flying time was 10 hours 15 minutes. The following Members had flying instruction:—S. R. H. Miller, E. R. King, E. J. Beard, and H. Beamish.

Solo flying was again restricted for the reason stated in last week's report. Mr. A. R. H. Miller has done 14 hours' flying during the past 8 days.

It may be of some interest to place on record an indication of the amount of flying put in by some of the members who are now flying solo.

H. Willis, 24 hours; E. Brighton, 30 hours; L. Knox, 22 hours; W. Swann, 18½ hours; R. L. Jackson, 14½ hours; H. Hassall, 18 hours.

The Newcastle-upon-Tyne Aero Club

Report for week ending June 27.—The total amount of flying carried out during the week amounted to 7 hrs. 30 mins., made up as follows:—

Dual instruction, 4 hrs.; solo flying, 3 hrs. 15 mins.; one passenger flight with Maj. Packman of 15 mins.

The following members flew under instruction:—

Messrs. Shaw, Detchon, Howard, J. Ball, Thirlwell and Twins.

Mr. Baxter, Chairman of the Newcastle Motor Club, flew with Maj. Packman on Tuesday.

On Wednesday, 23rd, Mr. W. Baxter Ellis flew with Mr. Paish as passenger. On the 25th he took up as passenger Mr. P. M. Dodds, the coroner who held the inquest upon the late Maj. Packman, for 15 mins.; and on Sunday, with Mr. N. S. Todd as passenger, he flew over the funeral procession to the cemetery at Cramlington, circled around during the service in the chapel, and while the Royal Artillery trumpeter sounded the Last Post he glided over the grave while Mr. Todd dropped a bunch of flowers.

On the 24th, at the time Maj. Packman should have flown at Druridge Bay

before the motor races organised by the Newcastle Motor Club, Mr. P. Forsyth Heppell flew over the course, performed a very graceful and slow loop, and Mr. Todd flew the machine back to the aerodrome. The carrying out of this flight out of respect to Maj. Packman was very much appreciated by all, and was a very touching incident. Black streamers flew from the struts.

Mr. Baxter Ellis and Maj. Packman each carried out flights of about 10 mins. on the "Gull" on Wednesday night. On Thursday morning Mr. Ellis flew once, Mr. Heppell twice, and then Maj. Packman took the machine up for the flight which proved to be his last.

The members of the club mourn the loss of an excellent instructor, a particularly energetic worker, always keen to fly under any conditions, and anxious to promote flying in any way possible. Aviation has lost more than is possibly appreciated by his death.

Messages of condolence were received from the following: Commander Perrin, on behalf of the Royal Aero Club and the London Aeroplane Club; Mr. J. F. Leeming, on behalf of the Committee and members of the Lancashire Aero Club; Mr. Stack, Chief Instructor, Lancashire Aero Club; Mr. J. F. Barnes, on behalf of the Yorkshire Aeroplane Club; Mr. O. E. Simmons, on behalf of the Hampshire Aeroplane Club; Mr. C. G. Grey, The Directors and staff of the De Havilland Aircraft Co.; J. Lankester Parker, Esq., H. Baker, Esq., on behalf of the Anglo-American Oil Co.; Mr. P. Hodgson, on behalf of the Scottish Office, A.I.D., the staff of the Berkshire Aviation Co.

Floral tributes were received from the Lancashire Aero Club, the De Havilland Aircraft Co. (Directors and staff), and the staff of the Berkshire Aviation Co. In addition to a very large number of local individuals and bodies.

A report on Maj. Packman's accident will be found elsewhere in this issue.

Southern Aero Club

ALMOST ideal weather favoured the Southern Aero Club on the day of their opening meeting on June 19 at Shoreham Aerodrome, and a splendid programme of flying was presented.

One of the most attractive items on the programme was the display given by a flight of five "Grebes" of No. 56 Squadron, R.A.F., Biggin Hill. It is of interest to note that this is the first meeting of a private club at which the Royal Air Force has assisted. Special thanks are due to Air Vice-Marshal H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., and to Squadron-Leader F. Vincent, D.F.C., for consenting to allow this detachment to assist.

The principal flying items were as follows:—Flight by the first graduate pupil of the club, Mr. F. Miles, who showed much skill in handling his "Centaur" and promises to become a first-class pilot. Exhibition of flying by Mr. C. L. Pashley, the club instructor, on an Avro. Aerobatic display by Capt. H. S. Broad, on a Moth. This well-known pilot gave a wonderful display. The next item was the truly marvellous display of flying given by the detachment of No. 56 Squadron. The display was divided into three parts—formation flying, evolutions in formation and flight drill, low bombing attack on a gun emplacement, and aerial combats and individual aerobatics. With such a high standard of excellence it is extremely difficult to give the preference to either the items, but the whole performance will not soon be forgotten by those who had the privilege of witnessing it. This was followed by a wonderful display of flying on an Avro. The last item was a flight on the Centaur by Sqd.-Ldr. Vincent.

Among the distinguished visitors may be mentioned Air Vice-Marshal Sir Sefton Branker, K.C.B., A.F.C., who flew to the meeting in a Moth. His kind appreciation of the aims and objects of the club was appreciated by the members.

The Private Owners' Club was represented by the Hon. Secretary, D. Kittell, Esq., and Sir John Rhodes, both of whom arrived by air. Mr. Kittell gave a graceful exhibition of flying in his Moth. Between two and three thousand spectators witnessed the display.

Report for week ending June 27: Hours flown: G. E. A. T. U., 6 hrs. 5 mins, G. E. A. L. L., 9 hrs, total 15 hrs. 5 mins.

The following members had dual instruction: Messrs. Parker, Poole, Richardson, Baxter, Naunton, Hewett, Ashby, Wallis, Bainbridge and Boucher.

On Thursday afternoon Messrs. Richardson and Parker made their first solo flights, both putting up a very creditable performance.

The weather has been good and it is hoped to get several members through for their tickets shortly.

ALAN COBHAM'S AUSTRALIAN FLIGHT

HAVING completed the many and necessary preparations for his flight to Australia and back, Mr. Alan Cobham started on his new venture on June 30. Owing to the shortness of the notice of his intended start, and the extra pressure on our space this week, we cannot do more than just briefly outline the outstanding points of this latest effort.

Perhaps the most important point to note is the fact that Mr. Cobham is using the self-same D.H.50 biplane and Siddeley "Jaguar" engine which he used on his recent flight to Cape Town and back. The machine, of course, has been completely overhauled, although the plywood of the fuselage (which was supplied by the Aeronautical and Panel Plywood Co., Ltd.) and the internal structure of the wings remain untouched, as they did not show the slightest signs of needing a change. The "Jaguar" engine, as previously reported in FLIGHT, was practically "as good as new," so that it was only a question of general overhaul and, perhaps, one or two minor replacements. Considering machine and engine had experienced five months of alternate European snow and Indian heat during the 16,000 miles of the last flight, it is gratifying to hear, as a point in favour of British aircraft construction, that they are fit for another expedition of 26,000 miles!

For the present flight the D.H.50 has been fitted with a pair of all-metal floats, which have been specially constructed for the flight by Short Bros., Ltd. These floats will be employed until Port Darwin in Australia is reached, when a land chassis will be fitted.

Mr. Cobham, who will be once more accompanied by Mr. A. B. Elliott, his trusty engineer, is following the route taken

by the late Sir Ross Smith and his brother, Sir Keith Smith, when they flew to Australia eight years ago in a Vickers "Vimy." This route is via Marseilles, Naples, Athens, Alexandretta, Baghdad, Karachi, Calcutta, Rangoon, Singapore, Timor, Port Darwin and Melbourne.

On Monday last Mr. Cobham gave a sort of "reception" at the works of Short Bros., Rochester—where the machine has been equipped with floats—and explained his plans and also made some trial flights on his D.H.50 seaplane, which has been named "Sir Charles Wakefield." Sir Charles, it should be mentioned, has contributed considerably towards the finances of this undertaking.

Mr. J. D. Siddeley, of Armstrong Siddeley Motors, Ltd., has, as he did in the London-Cape flight, also contributed towards the equipment and finance of the flight, while the British Petroleum Co., the Burmah Oil Co., and Shell-Mex, Ltd., have undertaken the all-important task of laying down supplies of fuel along the route. Many others have given valuable help, amongst whom may be mentioned the following:—

Short Brothers (Rochester and Bedford), Ltd., the British Thomson-Houston Co., Ltd., the Palmer Tyre, Ltd., the Fairey Aviation Co., Ltd., William Mallinson and Sons, Ltd., Brown Brothers, Ltd., James Booth and Co., (1915) Ltd., Accles and Pollock, Ltd., the Robinhood Engineering Works, Ltd., S. Smith and Sons (M.A.), Ltd., Pinchin, Johnson and Co., Ltd., Bruntons, Earle, Bourne, and Co., Ltd., Aeronautical and Panel Plywood Co., Ltd., J. Stone and Co., Ltd., Henry Hughes and Son, Ltd., Titanite Emaillite, Ltd., British Insulated Cables, Ltd., Tecalemit, Ltd., Hobdell, Way and Co., Ltd., and the Hoffman Manufacturing Co., Ltd.

THE ROYAL AIR FORCE

London Gazette, June 15, 1926

Princess Mary's R.A.F. Nursing Service

The following are appointed to permanent service (Jan. 1):—*Sisters:* Miss E. A. Risdon, Miss G. Swanston, Miss J. W. Walker. *Staff Nurses:* Miss F. M. Morey, Miss H. W. Cargill, Miss M. E. Grieseson, Miss A. W. Marsland, Miss M. T. Thorburn, Miss R. E. C. Polus, Miss L. H. Hardy, Miss O. Suddaby, Miss C. E. Holden, Miss U. F. C. Henson, Miss N. A. Hampton, Miss E. Wilson, Miss A. M. Herd, Miss L. B. Cartledge, Miss I. D. Mardon, Miss E. W. Griffiths, Miss V. Meikle.

Erratum.—Gazette of June 8 (FLIGHT, June 17, page 355): For A. M. Diamant, read A. M. Diamant.

London Gazette, June 22, 1926.

General Duties Branch

The follg. Pilot Officers on probation are confirmed in rank (May 28).—C. A. Anderson, J. L. Adams, R. Benham, T. B. Byrne, L. G. Gray, D. V. Ivins, H. J. J. Mumford-Mathews, F. J. Parker, J. G. Parkin, L. C. Phillips, L. H. Smith, E. G. C. Stokes, R. O. O. Taylor, E. L. Wilson, R. H. Winn, W. G. Woolliams.

Flight Lt. E. R. B. Playford is placed on retired list at his own request (June 19); Flying Offr. P. D. Baker is transfd. to Reserve, Cl. A, in this rank, and is granted permission to retain rank of Flight Lt. (June 21). The follg. Flying Offrs. are transfd. to Reserve:—Class A—W. F. Warner (June 20). Class C—C. E. Kelly (June 24); H. H. Storrs (June 23).

Stores Branch

Flying Offr. on probation F. B. Ludlow is confirmed in rank (May 24).

Medical Branch

Flight Lt. A. E. Barr-Sim, M.B., is promoted to rank of Squadron Leader (June 21).

Reserve of Air Force Officers

The follg. are granted comms. on probation in General Duties Branch in ranks stated:—Class A. (June 22).—Flying Offr. H. G. Travers, D.S.C.; Pilot Offr. C. T. G. R. Miller; Pilot Offr. R. E. La F. Wyatt. Class A.A. (June 6).—Pilot Offr. H. Bradley. (June 7).—Pilot Offr. L. J. C. Harding.

Pilot Offr. H. Lyne is confirmed in rank (June 5); Flying Offr. G. A. Milbank is transfd. from Class A to Class C (April 20).

The follg. officers relinquish their comms. on completion of service:—(April 20) Flying Offr. F. G. S. Musson, Flying Offr. E. E. Owen; (April 30) Flight Lt. T. R. Hackman; (May 1) Flying Offr. E. A. Kemp; (May 8) Pilot Offr. G. C. H. Dorman; (May 15) Flying Offr. J. F. Turpie, Pilot Offr. G. W. Perks; (May 22) Flying Offr. A. J. Bott, M.C., Flying Offr. I. Welby, M.C., D.F.C., Pilot Offr. J. C. Montgomery; (May 29) Flying Offr. H. A. Mason, Flying Offr. J. S. Stubbs, D.F.C., A.F.C., Pilot Offr. C. A. McIntosh; (June 19) Flying Offr. R. D. de L. Miller.

Princess Mary's R.A.F. Nursing Service

Sister Miss E. R. James relinquishes the actg. appt. of Senior Sister (May 24).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Air Commodore: C. R. Samson, C.M.G., D.S.O., A.F.C., to H.Q., Egypt, for duty as Chief Staff officer. 19.6.26.

Flight Lieutenants: E. P. Roberts, M.C., D.F.C., D.C.M., to R.A.F. Depot, Uxbridge, on transfer to Home Establishment, 6.6.26; K. E. Ward, to No. 45 Sqn., Iraq, 1.6.26; R. J. M. de St. Leger, to Home Aircraft Depot, Henlow, 5.7.26; J. A. W. Binnie to Armament and Gunnery School, Eastchurch, 25.5.26; W. J. Millen, to No. 13 Sqn., Andover, 1.7.26.

Flying Officers: E. S. Borthwick-Clarke, to No. 41 Sqn., Northolt, 11.6.26; R. A. R. Mangles, to Armament and Gunnery School, Eastchurch, 25.5.26; H. R. Lowry, to No. 39 Sqn., Spittlegate, 8.6.26; C. H. Morgan to No. 208 Sqn., Egypt, 9.10.25; G. M. Trundle, to R.A.F. Depot, Uxbridge on transfer to Home Estab., 30.5.26; R. H. Mahon, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 19.5.26; S. M. Thomas, to Aircraft Depot, Iraq, 25.5.26; J. A. P. A. Yearsley, to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 25.5.26; W. V. R. Nicholl, to No. 84 Sqn., Iraq, 8.6.26.

Stores Branch

Pilot Officer: L. F. Caunter, to Station H.Q., Northolt; 11.6.26.

Accountant Branch

Flying Officers: H. C. Roberts, to R.A.F. Depot, Uxbridge, on transfer to Home Estab.; 23.5.26. J. Charles, to H.Q., Air Defence of Great Britain, Uxbridge; 1.6.26. D. F. A. Clarke, to No. 47 Sqn., Egypt; 26.5.26. J. P. A. Fulton, to R.A.F. Depot, Uxbridge, on transfer to Home Estab.; 28.5.26.

Medical Branch

Squadron Leader: T. J. Kelly, M.C., M.B., B.A., to H.Q., Fighting Area, Kenley; 20.5.26.

Flying Officers: G. J. Griffiths, to R.A.F. Hospital, Cranwell; 21.6.26. A. F. Cook, to R.A.F. Hospital, Halton; 21.6.26.

Chaplains' Branch

Rev. M. K. MacLeod, M.A., F.S.A., to H.Q., Cranwell, on appointment to a Short Service Commission for duty as Chaplain (Presby.); 1.4.26.

IN PARLIAMENT

Egypt to India and Cape Colony Air Mail Services

LEUT.-COMMANDER KENWORTHY, on June 16, asked the Secretary of State for Air what progress has been made in the proposed air mail service between Egypt and India and when it is expected it will commence to operate; and whether steps are being taken to establish an air mail service from Egypt to Cape Colony?

Major Sir Philip Sassoon: As regards the first part of the question, the text of the formal agreement with Imperial Airways, Ltd., has been drawn up and communicated to their solicitors; the route has been surveyed from the air and from the ground; and steps are being taken for the preparation of the aerodromes, erection of buildings and the establishment of the necessary ground organisation. It is hoped that the service will start not later than January 1, 1927. As regards the last part, a proposal for an experimental air service between Khartoum and Kisumu for one year is at present under consideration.

Sir Frederic Wise: Will the service be subsidised?

Sir P. Sassoon: Yes sir!

R.A.F. and General Strike

COLONEL DAY asked the total sums received in respect of the conveyance and distribution of newspapers and mails, respectively, by Royal Air Force aeroplanes during the period of the general strike?

Sir S. Hoare: No payment has been received. Mails were carried on behalf of the Post Office, whilst the newspapers distributed consisted almost exclusively of the *British Gazette*, conveyed on behalf of the Stationery Office.

R.A.F. Hendon Display

SIR H. BRITAIN, on June 17, asked what number of 'planes, and how many different types, will take part in the forthcoming display at Hendon?

Sir Samuel Hoare: 180 aeroplanes of 28 different types will take part in the Royal Air Force display.

Sir H. Britain: Will the squadron of the Royal Air Force which is now returning from the Cairo-Cape-Cairo flight take part in this display?

Sir S. Hoare: It is hoped that the officers of the squadron and, possibly, the machines as well will take some part in the course of the display.

Airship Flight to India

SIR H. BRITAIN asked when it is expected that the first airship flight will be made to India; where mooring masts have been erected or are in

process of erection; and what negotiations are in progress with regard to continuing communication through to Australia?

Sir S. Hoare: The answer to the first part of the question is that the first flight to India may be expected to take place in the summer or autumn of 1928. As regards the second part, mooring masts are being erected at Cardington and Ismailia; it has been found necessary, for reasons of economy, to postpone for the present the erection of a mast at Karachi, where, however, a shed will be available. As regards the last part, no actual negotiations are in progress, but I have every hope that the present scheme of airship development will lead to a regular airship service to Australia.

Aircraft Flying at Shoreham

COLONEL DAY, on June 23, asked the Secretary of State for Air whether he is aware that aeroplanes flying from the Shoreham aerodrome continually fly at such a low altitude that the women and children on the beach at Shoreham and Worthing become frightened; and will he give the necessary instructions that aeroplanes using this aerodrome must in future fly at an altitude that will not cause this unnecessary inconvenience to the public?

Sir S. Hoare: I am not aware of the circumstances stated in the question. The aerodrome at Shoreham is not the property of the Air Ministry, and the machines referred to do not belong to the Royal Air Force. It is, however, competent for the local police to institute proceedings in the case of any infringement by civil aircraft of the provisions of the Air Navigation Order. This Order forbids, under penalty, the flying of aircraft in such circumstances as, by reason of low altitude or proximity to persons or dwellings or for any other reason, to cause unnecessary danger to any person or property on land or water.

Auxiliary Defence Scheme

SIR H. BRITAIN, on June 24, asked the Secretary of State for Air whether he can inform the House as to the progress which has been made in the efforts to create an auxiliary Air Force defence scheme for London; and what is the position of that force to-day?

Sir P. Sassoon: The work of completing the four squadrons mentioned in my reply to Captain Crookshank, on March 31 last, is proceeding satisfactorily. It is expected that a fifth squadron will be formed towards the end of the year.

Royal Air Force: Appointments to the Higher Commands.

THE Air Ministry announces the following appointments:—

Air Vice Marshal Sir John Higgins, K.B.E., C.B., D.S.O., A.F.C., now Air Officer Commanding, Iraq, as Air Member of Council for Supply and Research, in December next.

Air Vice-Marshal Sir Edward Ellington, K.C.B., C.M.G., C.B.E., now Air Officer Commanding, India, to command the Royal Air Force in Iraq, in November next.

Air Vice-Marshal Sir Geoffrey Salmond, K.C.B., K.C.M.G., D.S.O., now Air Member of Council for Supply and Research to command the Royal Air Force in India, in January next.

Air Vice-Marshal T. I. Webb-Bowen, G.B., C.M.G., now Air Officer Commanding, Inland Area, to command the Royal Air Force in the Middle East in November next, vice Air Vice-Marshal Sir Oliver Swann, on termination of his three years' appointment.

Air Vice-Marshal C. A. H. Longcroft, C.B., C.M.G., D.S.O., A.F.C., now Director of Personal Services, Air Ministry, to command the Inland Area, Royal Air Force, in November next.

HOW WIRELESS HELPED THE "NORGE"

In spite of the inevitable hazards of a Polar flight, the Marconi apparatus fitted on the "Norge"—the airship in which Roald Amundsen flew over the North Pole—rendered valuable service and played an important part in the remarkable success of the venture.

While the details so far given of its performance have been brief, the latest report from Commander Gottwaldt, who was in charge of the wireless and meteorological service on board, indicates that very satisfactory results were obtained. Communication was maintained with the outside world practically throughout the flight, until—by a mishap that could not have been foreseen—the 300-ft. trailing aerial, covered with ice, was broken during the last stages of the voyage, through the vessel having to fly extremely low. Even after this, however, the "Norge" was able to locate her position by means of the Marconi direction-finder, for which a second aerial, bound to the fabric of the airship, was used. Thus the direction-finder again proved its value to long-distance flying expeditions, as it has done previously on such occasions as Major Franco's Spain-Buenos Aires "raid."

Commander Gottwaldt's report shows that scarcely had the ship left Rome on April 10 when its signals were heard by the Air Ministry in London, and connection was also established with Pulham Aerodrome, Norfolk. During this first stage of the flight, from Rome to Pulham, the direction-finder was tested and found correct.

On the flight from Pulham to Oslo constant wireless communication was maintained with land and ship stations, while the bearings taken by means of the direction-finder proved of great value. Fog was encountered practically throughout the voyage from Oslo to Leningrad, and again the Marconi apparatus proved its utility.

Between Leningrad and Vadsø, in the extreme north of Norway, Commander Gottwaldt reports that: "Our signals were heard by several stations in the northern part of Norway and by Svalbard, Spitzbergen, and we had continuous connection with Russian stations in order to correct the course. Bearings were taken frequently and were all right."

Practically all the way over the polar regions, from King's Bay, Spitzbergen, to Alaska, very good connection was maintained with the Svalbard station, and the news of Amundsen's success was made known to the world many hours before the "Norge" landed.

The concluding phrases of Commander Gottwaldt's report comprise an epic in little. He writes: "Over Alaska the antenna was icy and the ship flew low in order to correct its position. The antenna touched the ground and broke."

"A few hours before we landed at Teller we got wireless bearings from two stations in Alaska, and as we later communicated with the stations and had their names, the radio bearings were of the greatest value to us. After landing, the wireless operator, Storm Johnsen, and I started to fix up the old spark Teller, and 24 hours later we had connection with Nome."

The specially constructed Marconi 500-watt valve transmitter with which the "Norge" was fitted, was described in FLIGHT for April 29 last.

New Non-Stop Flight Record

On June 27 Capt. Arrachart and his brother, Sergt-Maj. Arrachart, left Le Bourget at 5.30 a.m., on a Potez 28 fitted with a 550-h.p. Renault, in an attempt to beat the world's non-stop flight record, established by Capt. Arrachart and Lemaitre in February, 1925, Etampes-Villa de Cisneros, 3,166 km. (2,000 miles) in 25 hours. They landed at Basra on June 28, after a somewhat exciting journey, having covered 4,375 kms. (2,734 miles) in 26 hours 35 mins., and thus beaten the previous record. When over Constantinople the main petrol pump broke down, and they had to continue the rest of the journey working the hand pump. The Brothers Arrachart receive the Renault Cup Prize of 50,000 fr., while the Potez and Renault firms receive respectively prizes of 50,000 and 20,000 fr., given by the French Air Department.

Italian Aeronautical Propaganda

In order to arouse the interest of the Italian public in Aeronautics, a propaganda office called "Istituto Nazionale di Propaganda Aeronautica" has been created by the Italian Air Ministry. The special task of the newly established office is to promote air traffic in the country, and to inspire the great mass of Italian lads with an enthusiasm for flying. A wide propaganda campaign will be carried on throughout Italy in connection therewith.

SOCIETY OF MODEL AERONAUTICAL ENGINEERS (S.M.A.E.)

On Sunday, June 20, the Speed Competition for the S.M.A.E. Cup was held at the Royal Dental Hospitals Sports Ground (Hendon). This resulted in a highly interesting meeting, although an adverse wind made it difficult for all but the more heavily loaded machines to maintain their direction over the timed course. There were seven competitors, R. N. Bullock finally winning the competition with a recorded speed of 16 miles per hour—but taking into account the fact that this was up-wind (the speed of which was from 10 to 15 m.p.h.) the speed of his model was probably of the order of 29 m.p.h. As this competition was the first of its kind, several essential facts made themselves evident, chief of these being (1) high loading, and (2) clean design. The loading of the winning model exceeded 20 ozs. per sq. ft.

The Lady Shelley Cup Competition for fuselage seaplanes and flying boats, previously arranged to take place on Saturday, July 3, is, owing to the R.A.F. Display falling on this date, now postponed until the next day, Sunday, July 4 (3 p.m.). This is to be held at the Welsh Harp (Hendon).

The "Flight" Cup Competition (for Autogiro models) is to be held on Saturday, July 17, at the Sudbury ground. Rules for this were given in the June 17 issue of FLIGHT.

B. K. JOHNSON, Hon Secretary.

PUBLICATIONS RECEIVED

Technical Reports: No. 232.—The Lateral Failure of Spars. By S. Bromley and W. H. Robinson, junr. March, 1926. No. 233.—N.A.C.A. Flight-Path-Angle and Air-Speed Recorder. By D. G. Coleman. April, 1926. No. 234.—An Investigation of the Characteristics of Steel Diaphragms for Automatic Fuel-Injection Valves. By W. F. Joachim. April, 1926. U.S. National Advisory Committee for Aeronautics, Washington, D.C., U.S.A.

L'Aviation Commerciale. By Oscar Bonomo. Librairie des Sciences Aeronautiques, 48, rue des Ecoles, Paris. Price 12 francs (postage, 2.25 francs extra).

U.S. National Advisory Committee for Aeronautics Reports: No. 220.—Comparison of Tests on Air Propellers in Flight with Wind Tunnel Model Tests on Similar Forms. By W. F. Durand and E. P. Lesley. No. 222.—Spray Penetration with a Simple Fuel Injection Nozzle. By H. E. Miller and E. G. Beardsley. No. 231.—Investigation of Turbulence in Wind Tunnels by a Study of the Flow about Cylinders. By H. L. Dryden and R. H. Heald. U.S. National Advisory Committee for Aeronautics, Washington, D.C., U.S.A.

NEW COMPANY REGISTERED

HEYSHOTT ENGINEERING CO., LTD., Melton House, Heyshott, Sussex.—Capital £100, in 1s. shares.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1924

Published July 1, 1926

10,678. G. F. MYERS. Flying-machines. (252,266.)

29,744. D. J. MOONEY. Framework members for aircraft. (252,755.)

APPLIED FOR IN 1925

Published July 1, 1926

5,661. G. F. PRETYMAN. Landing-gear. (252,769.)

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